Moyle and EWIC interconnector user forum - Agenda

Introduction & welcome – 10:30am

- I-SEM Overview
- Introduction to FTRs
- Overview of Consultations
- JAO – Registration, Credit Cover, Operation, Reporting
- Moyle Asset Management

Lunch

- Celtic Interconnector Project
- EWIC Asset Management
- Trialling, testing for FTR and timelines
- Cut Over to FTRs / Contingency arrangements

Close – by 4:00pm

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I-SEM Overview

Interconnector User Forum

3 May 2017

Agenda

1. ***What is the I-SEM?***
2. *Market coupling*
3. *Day-Ahead and Intra-Day Markets*

What is the I-SEM?

The Integrated Single Electricity Market (I-SEM)

- new wholesale electricity market arrangement for Ireland and Northern Ireland.
- The existing market arrangements are replaced by multiple markets or auctions, each spanning different trading time frames, with separate (although related) clearing and settlement mechanisms, covering both energy and non-energy commodities.

Note. The all-island electricity market is still referred to as the Single Electricity Market (SEM). For clarity in this document, the existing arrangements are referred to as the SEM and the new arrangements are referred to as the I-SEM.

The new market arrangements are designed to:

- integrate the all-island electricity market with European electricity markets,
- making optimal use of cross-border transmission assets, which, according to the SEM Committee[1], is expected to "***deliver increased levels of competition which should help put a downward pressure on prices as well as encouraging greater levels of security of supply and transparency***".

In addition to integration with Europe, some of the key considerations in the design of the I-SEM included how:

- energy is bought and sold;
- how generators are remunerated for availability;
- forward trading arrangements and market liquidity;
- market power controls; and
- the systems, policies and procedures that are required to operate the market.

1 SEM Committee is the peak decision-making body for the SEM, <https://www.semcommittee.com>

What is the I-SEM?

The new market arrangements present participants with many new challenges, but they also offers participants many new opportunities. Broadly, the I-SEM arrangements are intended to:

- enable broad participation in energy markets,
- increase the opportunities for participants to trade in different time frames,
- provide participants with a variety of arbitrage and hedging opportunities,
- maximise the efficient use of interconnectors in system balancing,
- provide cost drivers for system balancing, and
- integrate balancing and system security actions with market operation.

The I-SEM arrangements are due to go live mid-2018.

Note. Following the UK Brexit referendum in June 2016, the SEM Committee voiced its continuing support for I-SEM, noting that "there are good economic reasons for the all-island market which exist independently of European Union law or policy."

Markets

The I-SEM comprises two ex ante energy markets, a balancing market, two markets for financial instruments, and a market for capacity remuneration. These markets operate independently and on different timelines.

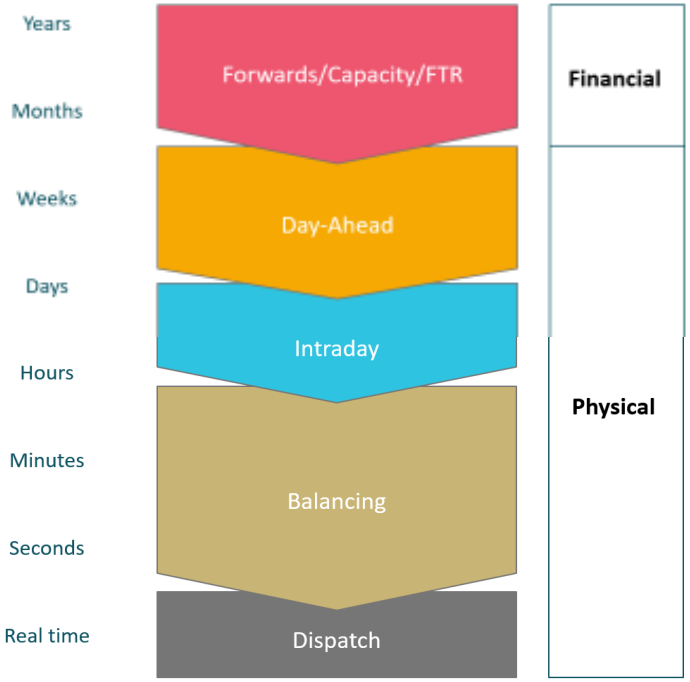
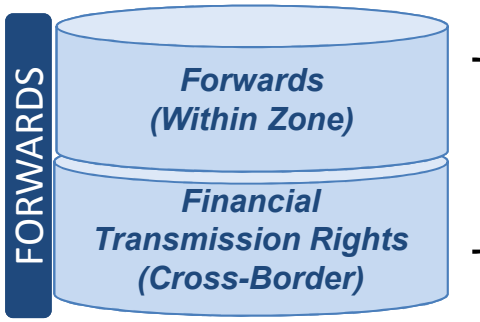
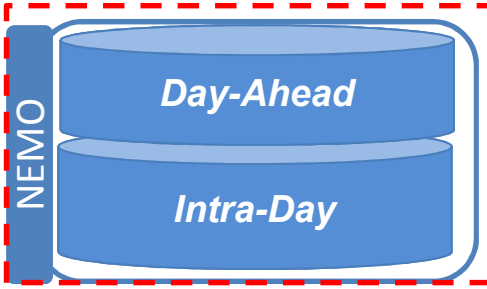


Figure 2 Market time frames

I-SEM – Market Segments



- CfDs between generators and suppliers
- Financial rights on GB/SEM price spread

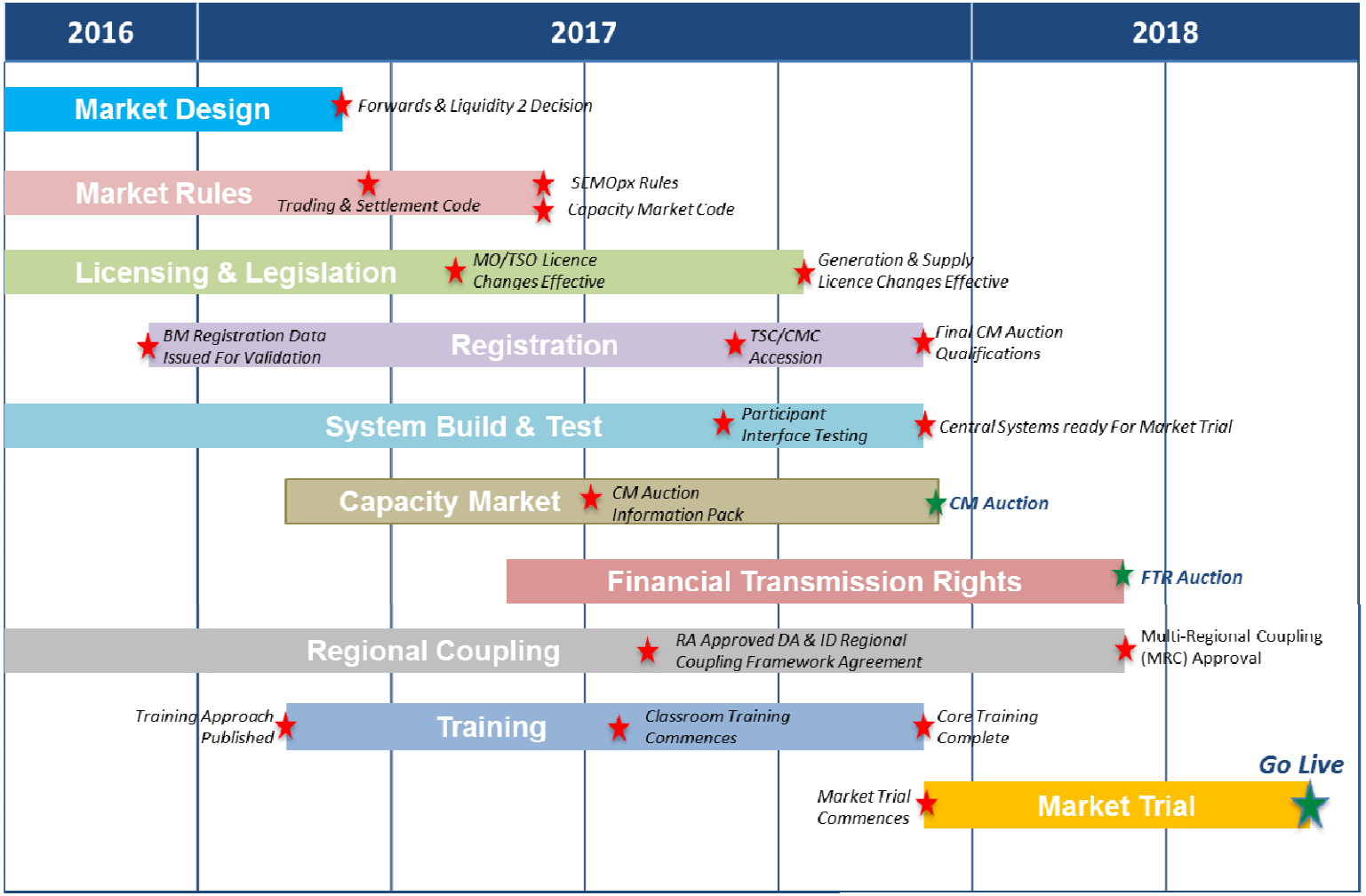


- Auction coupled with PCR bidding zones
- Local continuous and regional auctions

- Settlement of TSO balancing actions
- Settlement of imbalances

- Auction for options on required capacity
- Option pays suppliers in times of high price
- Generators receive regular payments

I-SEM High Level Plan



Agenda

1. *What is the I-SEM?*

2. ***Market coupling***

3. *Day-Ahead and Intra-Day Markets*

Market coupling

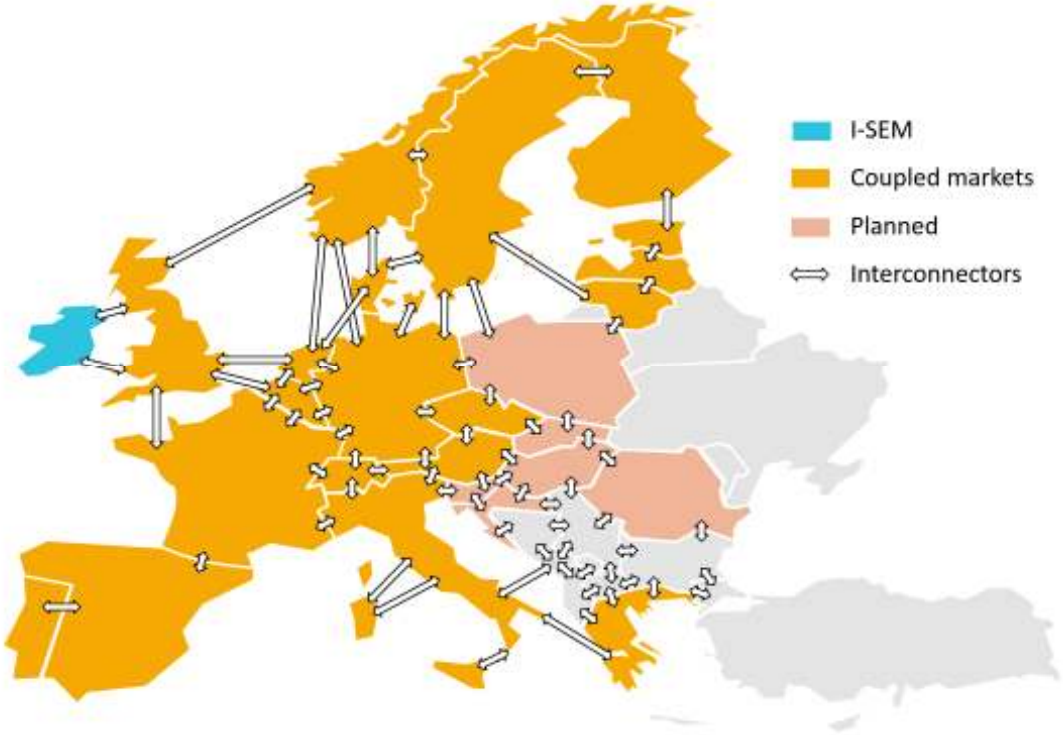
European Internal Energy Market (IEM)

- Key pillar of European single market
- Free trade across borders and non-discrimination between internal and cross-border transactions

Once I-SEM joins in 2018, IEM will comprise

- 20 countries
- 38 cross-border coupled interconnectors
- Generating capacity over 3000 TWs

Internal Energy Market showing cross-border interconnectors (2018)



EIRGRID semo SONI

Market coupling

Market coupling:

- means by which these energy markets are integrated.
- each coupled market implements a common set of rules and standardised wholesale trading arrangements
- achieved by adopting the European Target Model, which is the blueprint for market integration across the IEM, including the I-SEM.

Key features of the Target Model are:

- a common price coupling algorithm for scheduling day-ahead markets and determining flows between geographic regions.
- energy trading within regions and across borders up to close to real time.
- a hedging facility for price differences between regions due to transmission congestion.
- integrated balancing arrangements that will ultimately enable neighbouring system operators to trade between regions as part of balancing.

Market coupling

In a coupled market:

- energy transactions involving sellers and buyers from different bidding zones are centrally collected to maximise the most efficient and effective trades.
- Trades from one bidding zone to another are only restricted by cross-border capacity.
- Market coupling involves system operators working together to allocate cross-border capacity and optimise cross-border flows, without the need for explicit auctions.

In theory, with market coupling, as long as energy can flow freely, there will be a single price. When the network is congested, prices diverge. The price differential between bidding zones incentivises investment in the most efficient infrastructure to relieve the congestion.

Agenda

1. *What is the I-SEM?*
2. *Market coupling*
3. ***Day-Ahead and Intra-Day Markets***

Day-Ahead & Intra-Day Markets

There are two ex ante markets for physical energy: the **Day-Ahead Market** (DAM) and the **Intraday Market** (IDM). As the names imply, the DAM closes the day before delivery and the IDM operates in the interval between closure of the DAM and one hour before delivery.

The DAM is a highly liquid, pan-European market and is the cornerstone of European market integration. The DAM is operated by the MCO, and participants submit orders via their respective NEMOs, who, in turn, interact with the MCO.

The IDM operates in a similar fashion to the DAM (although there are some important differences, but will be regional) and provides traders with the ability to adjust their positions as market conditions fluctuate closer to real time—for example, an unscheduled outage.

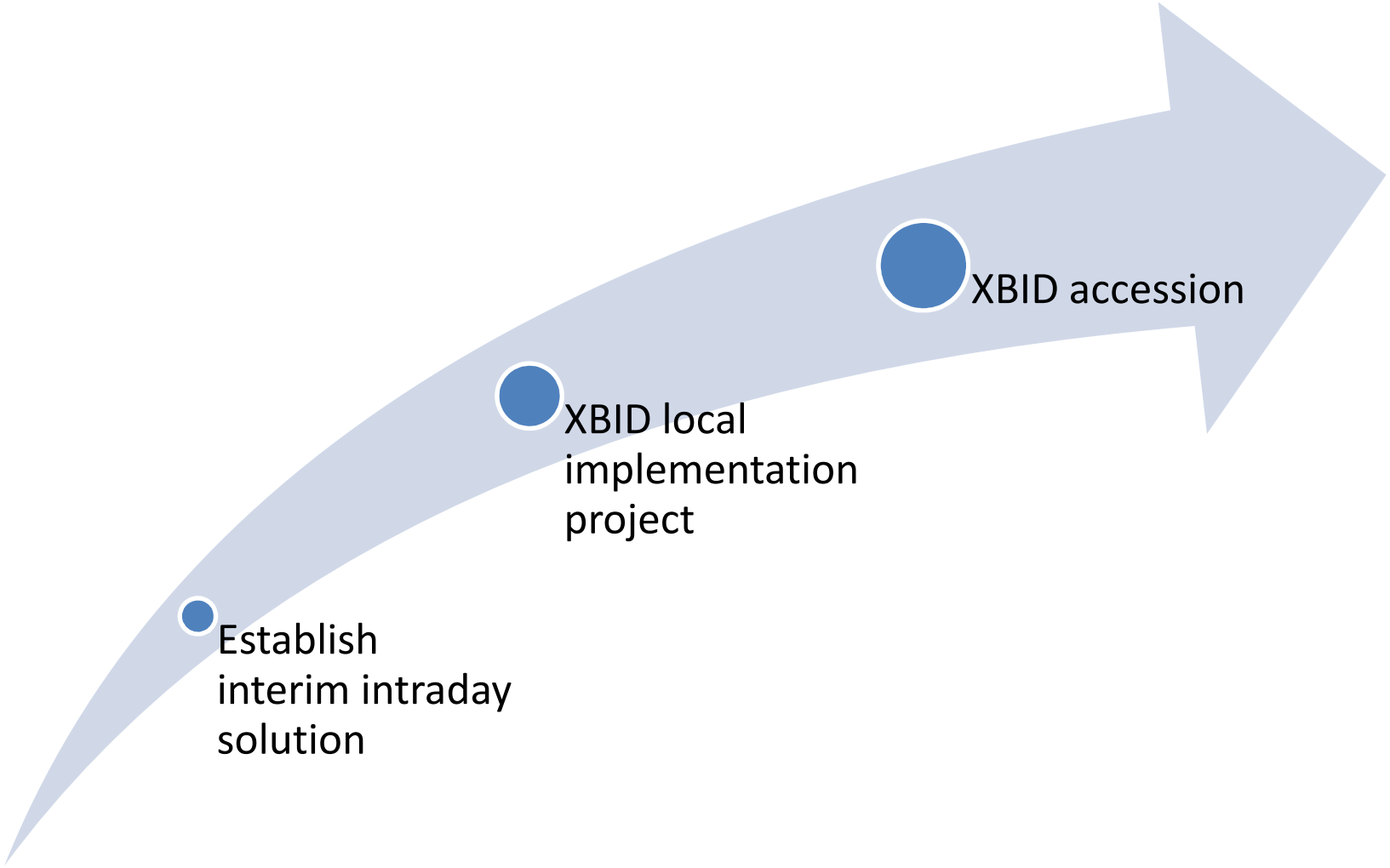
Regional Intraday Auctions – Background

- I-SEM high level design called for use of XBID
  - Continuous cross border trading in line with CACM

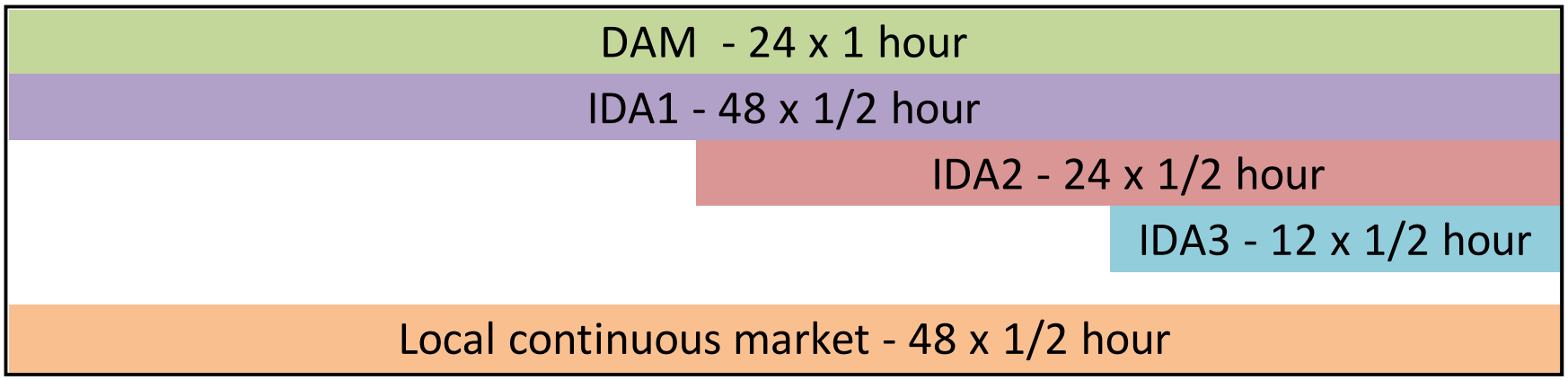
- Timeline would not have allowed for XBID for I-SEM go-live
  - System currently in development
  - Accession process also required

- Interim intraday solution required:
  - Allow for IDM until I-SEM can join XBID
  - Should allow for ease of transition
  - Should allow for cross border trade
  - Not a CACM compliant or long term solution

Regional Intraday Auctions – Long Term Plan



I-SEM – Ex-Ante Markets



- Four auctions for each trading day:
  - One DAM using PCR coupling and timeframes
  - Three intraday auctions with 30 minute products
- Local continuous market in parallel:
  - Opens following order book closure of the DAM
- EPEX and ECC providing services for NEMO:
  - Under contract with EirGrid/SONI

Regional Intraday Auctions – Auctions

Auction Short Name	Order Book Closure	Hours in Auction	Trading Periods
IDA1	15:30 (D-1)	23:00 – 23:00	48 * ½ hour
IDA2	08:00 (D)	11:00 – 23:00	24 * ½ hour
IDA3	14:00 (D)	17:00 – 23:00	12 * ½ hour

- Decision was to have three auctions as preferred approach:
  - Feedback was a desire in SEM for more than two
  - Allow participants to react to updated forecast data
- Auctions should be coupled cross border:
  - Currently two cross border auctions in SEM
  - Coupling will reduce the overhead in participating cross border
  - Subject to agreement with GB NEMOs
- Auctions supplemented by local continuous market

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I-SEM Project – Contact Details

Questions or comments welcome. Details below.

Web: http://www.sem-o.com/isem/Pages/Home.aspx

Email : I-SEMproject@sem-o.com

THANK YOU!

EIRGRID semo SONI

Additional Information

Markets

Balancing market

Before and into real time, the TSO calls on balancing services to keep the transmission system balanced (i.e. energy supply = energy demand). Energy balancing services are offered into the **Balancing Market** (BM) by generators (energy producers) and suppliers (energy consumers). For example, if demand is higher than expected, the TSO might instruct a generator with available capacity to increase its output. The generator is then paid through the BM for the additional energy used to balance the grid.

Note. The TSO can also call on non-energy balancing services, such as voltage regulation or energy reserves.

A participant's net energy position is the accumulated volume of all its trades in the ex ante markets (DAM and IDM) and any balancing actions taken by the TSO in the BM.

Markets

Financial instruments

The I-SEM provides market participants with hedging facilities against price fluctuations in the forwards time frame—that is, months to years in advance of energy delivery.[4]

A Contract-for-Difference (CfD), purchased in the **Forwards Market** (FWM), is a hedging instrument in which a price is struck (the ”strike price”) for a quantity of energy delivered on a future day. The contract holder then receives or pays the difference between the contract strike price and the spot price (called the “reference price”). As a financial trade, the CfD results in a profit or loss in euros, but there is no resultant net energy change.

A Financial Transmission Right (FTR), purchased in an **FTR auction**, is a hedging instrument that protects the holder from price differentials between coupled markets. If energy flows freely between adjacent “bidding zones” (e.g. the islands of Ireland and Great Britain), then the price in each market will be equal. However, if flow on an interconnector is congested, prices will diverge. FTRs are offered by interconnector owners and the revenues they earn is called “congestion rent”.

[4] The Forwards Market and FTR auctions are European-wide and available to SEM participants, but are not formally part of the I-SEM arrangements and not covered by the I-SEM design or codes.

Markets

Capacity market

Capacity is a commitment by a generator or interconnector owner to be available to deliver energy into the grid, if called on to do so. Capacity providers who are successful in the **Capacity Market** (CM) receive a regular capacity payment, which assists with funding generation capacity. The costs of purchasing capacity are socialised amongst suppliers and funded, in part, by the capacity providers returning revenues above a regulated “strike price” back to suppliers.

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Financial Transmission Rights

3 May 2017

Outline – GB/SEM Interconnectors

- Today: Physical Transmission Rights (PTRs)
- I-SEM: Financial Transmission Rights (FTRs)
  - Who, What, Where, When, How
  - Governance, Period, Pricing, Collateral, Trips, Losses
  - Next steps
- Contacts: Moyle, EWIC, JAO

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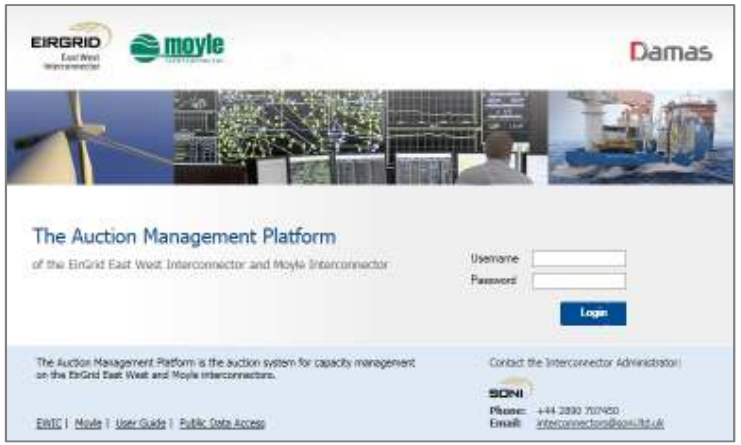
Today: Physical Transmission Rights

- Right to nominate physical flow on the interconnector
- Sold through Auction Management Platform administered by Interconnector Administrator (SONI/EirGrid)
- Auctions:
  - Long term
  - Daily
  - Intra-Day, Within Day (implicit)
- IUNs, MIUNs
- Settlement of MIUNs in each market



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Financial Transmission Rights: What?

- The I-SEM forwards market will be strictly financial
- Interconnectors will sell Long Term Transmission Rights in the form of Financial Transmission Rights
- Financial Transmission Rights (FTRs) are a form of contract for difference linked prices in two interconnected markets
- FTRs offered by Moyle will be FTR options. FTR options are a one way contract for difference, entitling the holder to receive the positive day ahead market spread in the direction of the FTR option.
- Day ahead spread determined hourly, result of market coupling

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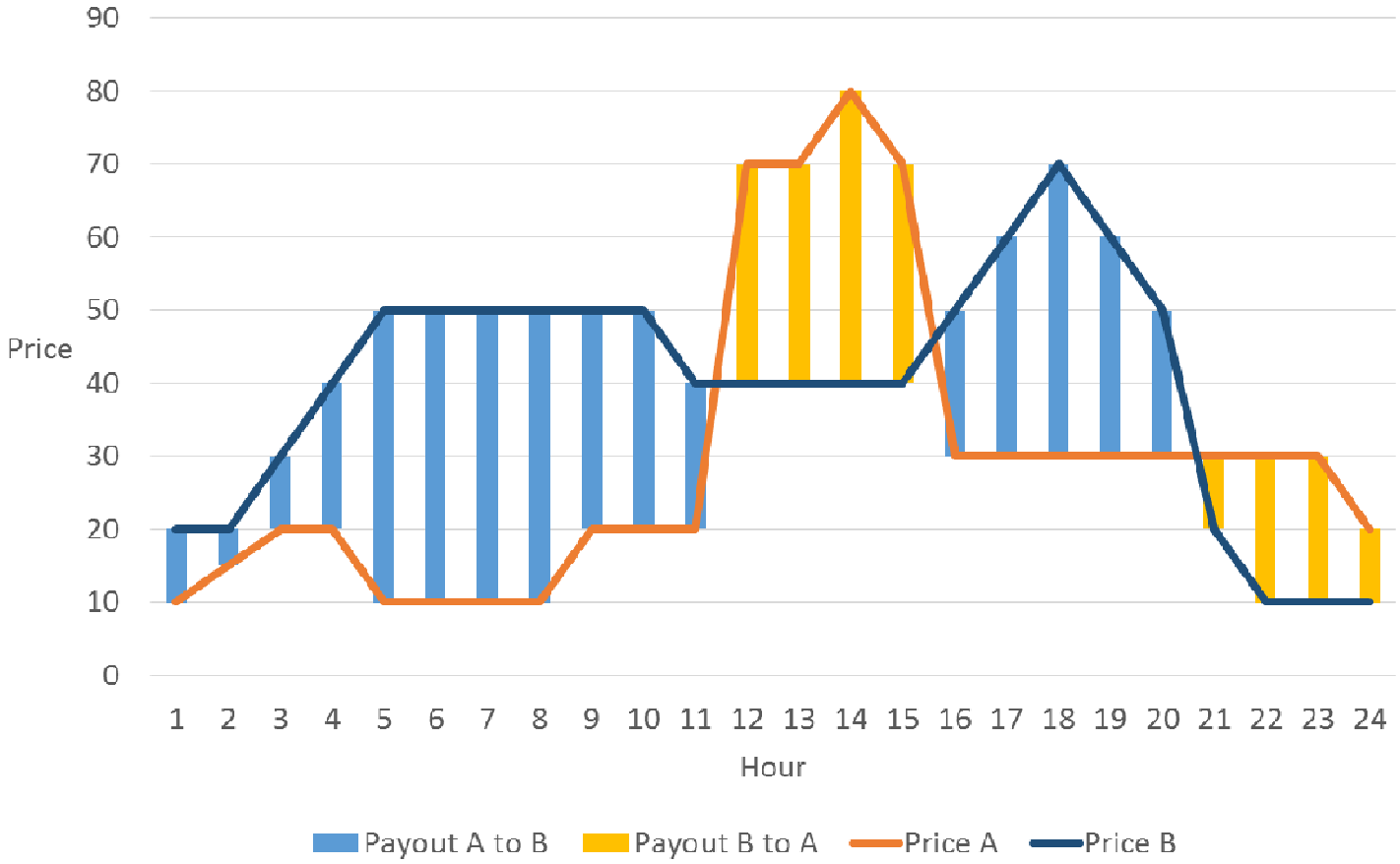
FTRs: Prices and Payouts



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Losses

- FTR pay-outs will be adjusted for interconnector transmission losses
  - specific to each interconnector
  - loss factor determined as part of TLAF process

$$Loss\ adjusted\ market\ spread = Max\left[\left(Market\ B\ price - \left(\frac{Market\ A\ price}{1 - interconnector\ loss\ factor}\right)\right), 0\right]$$

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Financial Transmission Rights: Who? Where?

- FTRs will be sold by individual Interconnector Owners

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moyle interconnector

EIRGRID
East West Interconnector

- Sold through eCAT platform of Joint Allocation Office
- Common platform with other interconnectors

JAO
Joint Allocation Office

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Financial Transmission Rights: When?

- Before I-SEM – PTRs sold and used
  - FTR auction trials from Q3 2017
  - Approaching I-SEM go-live FTRs will be sold for I-SEM live period
  - First auction planned for between **March and May 2018**
- **I-SEM Go-Live – 23rd May 2018**
  - After I-SEM live – FTRs sold and used

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Financial Transmission Rights: How?

- Sold **by** Interconnector Owners
- Sold **through** JAO
- Pricing by pay as clear auction
- Payment and settlement in €
- The JAO platform will manage:
  - FTR auctions
  - auction settlement
  - FTR pay-out settlement
- Participant collateral in JAO pooled for all borders
- Auctions governed by Harmonised Allocation Rules for long-term transmission rights and the associated SEM-GB border annex

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How to use FTRs?

- FTRs offer a valuable hedging tool to market participants, particularly when combined with access to the neighbouring forwards market

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Example 1

- Generator in bidding zone A
- Wants to sell electricity to zone B
- Buys at auction an FTR option in the direction A to B
- At day ahead, FTR option will pay out the spread (if positive) between the markets
- Receiving the market spread allows a participant to sell its energy at the lower price in zone A but ultimately receive the higher zone B price
  i.e. receives the Zone A price plus the FTR pay-out.

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Example 2

- Supplier in zone B wishes to buy electricity from zone A
- (Useful as a hedge against the bidding zone B price)
- Buys at auction an FTR option in the direction A to B
- At day-ahead, if the clearing price in zone B is higher than zone A the FTR option will pay out the spread between the markets
- Receiving the market spread allows the supplier to sell its energy in bidding zone B but ultimately pay the lower zone A price
  i.e. pays the Zone B price and receives the FTR pay-out

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Comparison: PTRs vs FTRs (1)

	Physical Transmission Rights	Financial Transmission Rights
What?	Right to nominate physical flow on the interconnector	Right to receive positive market spread
Who? Where?	Sold separately by each interconnector	
When?	Until I-SEM go-live	From I-SEM go-live
How?	Sold through Auction Management System operated by Interconnector Administrator function provided by SONI/EirGrid	Sold through JAO eCAT platform

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Comparison: PTRs vs FTRs (2)

	Physical Transmission Rights	Financial Transmission Rights
Governed by	Access Rules Charging Methodology Statement	Harmonised Allocation Rules for Long Term Transmission Rights
Product period	Annual, seasonal, quarterly, monthly, short term	Annual, seasonal, quarterly, monthly
Pricing	Determined at auction, pay as clear	
Collateral	Separate for each IC	Pooled for all borders using JAO
Risk of trip	MIUNs curtailed, holder trades out of imbalance position	None. FTR purchase and pay-out is based on DA spread only.
Losses	MIUNs determined on GB side. SEM participants settle after TLAFs.	Pay-outs adjusted for losses

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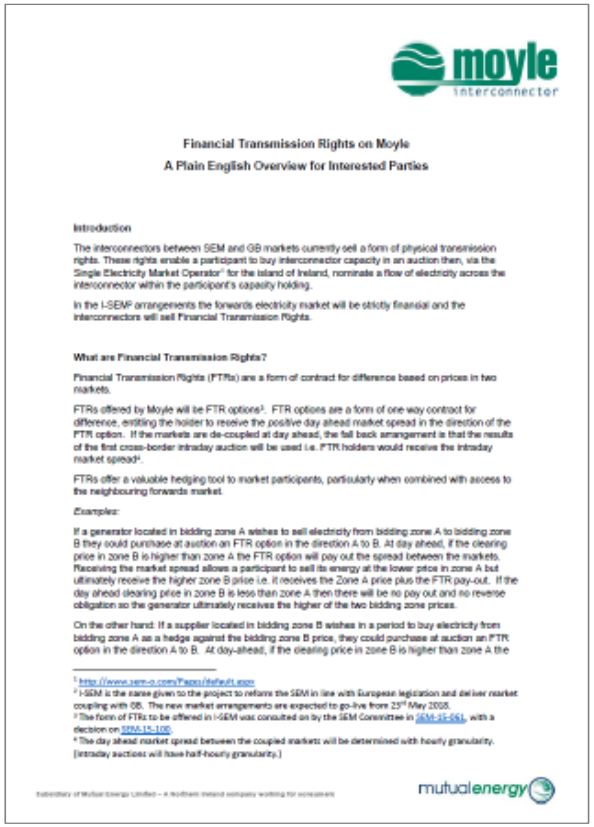
Guide



moyle interconnector

Financial Transmission Rights on Moyle

A Plain English Overview for Interested Parties

Introduction

The interconnectors between SEM and GB markets currently sell a form of physical transmission rights. These rights enable a participant to buy interconnector capacity in an auction then, via the Single Electricity Market Operator[1] for the island of Ireland, nominate a flow of electricity across the interconnector within the participant's capacity holding.

In the I-SEM[2] arrangements the forwards electricity market will be strictly financial and the interconnectors will sell Financial Transmission Rights.

What are Financial Transmission Rights?

Financial Transmission Rights (FTRs) are a form of contract for difference based on prices in two markets.

FTRs offered by Moyle will be FTR options[3]. FTR options are a form of one way contract for difference, entitling the holder to receive the positive day ahead market spread in the direction of the FTR option. If the markets are de-coupled at day ahead, the fall back arrangement is that the results of the first cross-border intraday auction will be used i.e. FTR holders would receive the intraday market spread[4].

FTRs offer a valuable hedging tool to market participants, particularly when combined with access to the neighbouring forwards market.

Examples:

If a generator located in bidding zone A wishes to sell electricity from bidding zone A to bidding zone B they could purchase at auction an FTR option in the direction A to B. At day ahead, if the clearing price in zone B is higher than zone A the FTR option will pay out the spread between the markets. Receiving the market spread allows a participant to sell its energy at the lower price in zone A but ultimately receive the higher zone B price i.e. it receives the Zone A price plus the FTR pay-out. If the day ahead clearing price in zone B is less than zone A then there will be no pay out and no reverse obligation so the generator ultimately receives the higher of the two bidding zone prices.

On the other hand: If a supplier located in bidding zone B wishes in a period to buy electricity from bidding zone A as a hedge against the bidding zone B price, they could purchase at auction an FTR option in the direction A to B. At day-ahead, if the clearing price in zone B is higher than zone A the

[1] http://www.sem-o.com/Pages/default.aspx
[2] I-SEM is the name given to the project to reform the SEM in line with European legislation and deliver market coupling with GB. The new market arrangements are expected to go-live from 25th May 2018.
[3] The form of FTRs to be offered in I-SEM was consulted on by the SEM Committee in SEM-15-041, with a decision on SEM-15-100.
[4] The day ahead market spread between the coupled markets will be determined with hourly granularity. [intraday auctions will have half-hourly granularity.]

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Contacts

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Moyle

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Web: www.mutual-energy.com

EWIC

E-mail: eastwestinterconnector@eirgrid.com
Tel: +353 (0)1 677 1700
Web: www.eirgrid.com

Joint Allocation Office

JAO Helpdesk

E-mail: helpdesk@jao.eu
Tel: +352 27 62 38 01
Web: www.jao.eu/support/resourcecenter/overview
(includes FAQs)

Q&A

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Consultations overview

3 May 2017

Context

- CACM
  - Capacity calculation, allocation and congestion management in the day-ahead and intraday cross-border markets
- FCA
  - Capacity calculation and allocation in forwards timeframes
- Interconnector licences
  - Issued by UR, CER and Ofgem and require Access Rules consultation

Context

- CACM Entry into force August 2015
- SEM Derogation to Dec 2017
- I-SEM = delayed implementation of CACM (and FCA)?
- Now parallel

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Standard consultation and approval process

- TSOs develop proposal by x months after entry into force [or approval of precedent methodology]
- Consultation for at least one month
- Regulatory approval (or request for amendment) 6 months later
  - 2 months to submit amended proposal
  - Regulatory approval 2 months later (or ACER referral)
  - ACER decision within 6 months

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Key relevant consultations

- EU level
  - Harmonised Allocation Rules (HAR) - FCA
  - Single Allocation Platform (SAP) – FCA

- Regional level
  - HAR Annex - FCA
  - Regional Design of Long Term Transmission Rights and splitting rules - FCA
  - Capacity calculation methodology – CACM & FCA

Key relevant consultations

- Local level
  - Moyle and EWIC Access Rules – interconnector licence
  - Access rules updates needed to enact HAR, implement I-SEM transition and consult on Moyle interim capacity calculation

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Harmonised Allocation Rules (HAR)

- 3rd iteration consulted on in Q1 2017
  - In I-SEM context these set rules for FTR allocations e.g. eligibility, PTR UIOSI and FTR payouts, credit cover, settlement, firmness

- Minimal change from previous iterations

- Submitted for approval April 2017

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Harmonised Allocation Rules (HAR) – SEM-GB regional annex

- FCA allows regional deviations from HAR
- 3rd iteration consulted on in Q1 2017. SEM-GB annex covers:
  - I-SEM logistics
  - Fallback arrangements for FTR payouts
  - Application of interconnector losses
  - Standard HAR HVDC firmness arrangements
  - Clarifies that asset outage = curtailment
- Significant changes based on feedback and submitted for approval April 2017

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Single Allocation Platform (SAP)

- FCA article 49 requires all TSOs to develop a set of functional requirements within 6 months of FCA entry into force
- No consultation required
- Submitted for approval April 2017
  - Proposes JAO as ‘SAP Operator’

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Regional design of Long Term Transmission Rights (LTTRs)

- FCA article 31 requires regional TSOs to develop a proposal for the regional design of long-term transmission rights within 6 months of FCA entry into force
- 'Type' already decided by CER/UR as part of I-SEM
- Consultation focused on timeframes

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Regional design of Long Term Transmission Rights (LTTRs) and capacity splitting

- Broad support for current product mix with demand for peak/off-peak and weekly
  - Current mix will be used initially for I-SEM
  - Other products expected to be introduced from 2020
- Submitted for approval April 2017

- Capacity splitting methodology to be developed Q2/Q3 2018

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Capacity calculation

- Interim NI-GB capacity calculation to be agreed by Moyle, NGET and SONI
  - To be effective November 2017
- Coordinated DA/ID calcs required by CACM
  - To be submitted for approval September 2017
- Coordinated LT calcs required by FCA
  - To be submitted for approval 6 months after DA/ID approval (eta September 2018)

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Capacity calculation methodology timelines

	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Summer 2018	Sep-18
Interim cap calc	Draft	Consult	Submitted for approval										
DA/ID calcs	Draft	Draft	Consult		Submitted for approval								
LT calc						Draft						Consult	Submitted for approval

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Capacity calculation

- Avenue to address NGET restrictions on Moyle in Scotland
- May be contentious
- Consultation feedback welcomed

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Status summary

	Methodology	Development status	Submission	Approval
How much?	Moyle interim cap calc*	Ongoing	Jul-17	Oct-17
	DA/ID cap calc	Ongoing	Sep-17	Mar-17
	LT cap calc	Not started	Sep-18	Mar-19
What?	Regional design	Finished	Apr-17	Oct-17
	Spitting methodology	Not started	Sep-18	Mar-19
How?	SAP proposal	Finished	Apr-17	Oct-17
Rules?	HAR	Finished	Apr-17	Oct-17
	SEM-GB annex	Finished	Apr-17	Oct-17

*plus HAR enactment and I-SEM cutover

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Q&A

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Web: www.eirgrid.com

4th Annual East West Interconnector and Moyle Interconnector User Forum

4 May 2017 Belfast

JAO.EU

- Who is JAO?
- Registration process
- Credit Cover
- Operation - Explicit Auction Platform – eCAT
- Reporting

Who is JAO?

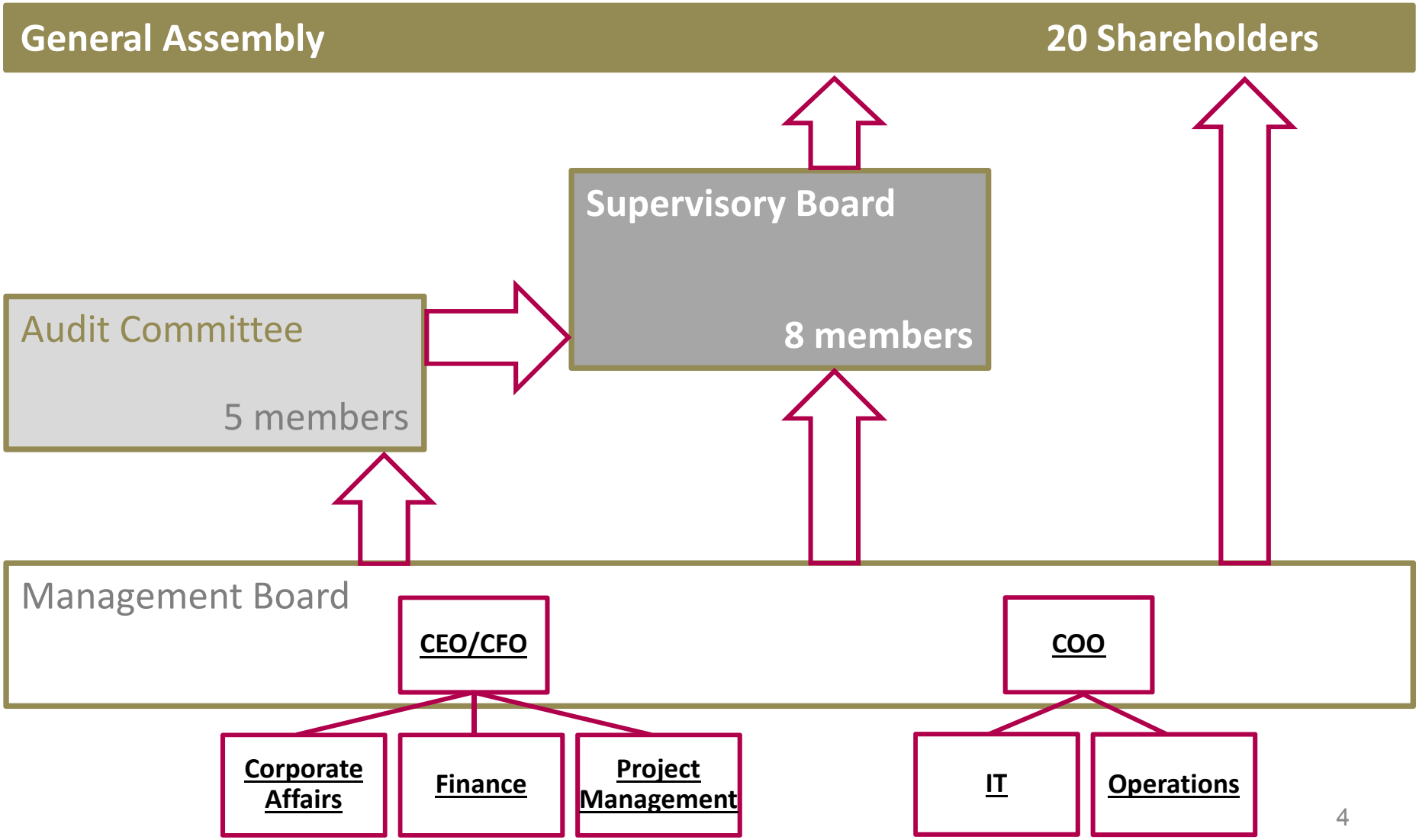
- Recent history

On 24 June 2015 the General Assemblies of CAO and CASC.EU, the two regional allocation offices for cross border electricity transmission capacities, approved the merger agreement to create the Joint Allocation Office (JAO).

- General Information

JAO is a joint service company of twenty Transmission System Operators from seventeen countries. It performs the yearly, monthly, daily and intraday auctions of transmission rights on 27 borders in Europe and acts as a fall-back for the European Market Coupling

Who is JAO?


General Assembly
20 Shareholders
Supervisory Board
8 members
Audit Committee
5 members
Management Board
CEO/CFO
COO
Corporate Affairs
Finance
Project Management
IT
Operations

Who is JAO?

- JAO S.A is composed of twenty shareholders:
  - 50 Hertz Transmission GmbH, Germany
  - Amprion GmbH, Germany
  - Austrian Power Grid AG, Austria
  - ČEPS, a.s., Czech Republic
  - CREOS Luxembourg S.A., Luxembourg
  - ELES, Ltd., Electricity Transmission System Operator, Slovenia
  - Elia System Operator S.A., Belgium
  - Energinet.dk, Denmark
  - HOPS Croatian Transmission System Operator Ltd., Croatia
  - Independent Power Transmission Operator S.A., Greece
  - MAVIR Hungarian Independant Transmission Operator Company Ltd., Hungary
  - Polskie Elektroenergetyczne S.A., Poland
  - RTE Réseau de Transport d'électricité, France
  - SEPS Slovenská elektrizačná sústava, a.s., Slovak Republic
  - Statnett SF., Norway
  - TenneT TSO BV, Netherlands
  - TenneT TSO GmbH, Germany
  - Terna – Rete Elettrica Nazionale Società per Azioni, Italy
  - TransnetBW GmbH, Germany
  - Swissgrid AG, Switzerland

Who is JAO?

- Rules Governance
  - CACM network code (EU 2015/1222) sets the guidelines to the day ahead activities performed by JAO
  - FCA sets the guidelines for the long term activities performed by JAO

- JAO Rules
  - Allocation Rules for Forward Capacity Allocation from 29 June 2016
  - Shadow Allocation Rules from 01 August 2016
  - Different regional short term allocation rules (daily and intraday)

Who is JAO?

- Capacity Allocation Related Services
  - Explicit market
    - Explicit Auction Allocation (FTR Options & PTRs)
    - Secondary Market
    - Publication
    - Settlement
    - Fall-back solution for MC
  - Implicit market
    - Day ahead results validation
    - Cross zonal flow calculation
    - Congestion revenue distribution

Who is JAO?

- Working Area for Explicit Auctions

- Who is JAO?
- Registration process
- Credit Cover
- Operation - Explicit Auction Platform – eCAT
- Reporting

Registration process

- Registration under Harmonized Auction Rules
  - 1st step – contracts
    - 2 original copies from the Participation Agreement
    - 2 original copies from the Financial Agreement
    - Commercial Extract/ Constitution Deed

    JAO checks and countersigns the documents within 7 working days

  - 2nd step – registration in the Auction platform
    - User Account form
    - Public parts of the electronic certificate
    - ID copy
    - Power of Attorney
    - Signatory Specimen Form
    - Bank Guarantee

  Based on above mentioned documents JAO registers MP in Auction tool.

  Registration process is published on JAO website under Support > Resource Center > JAO Registration

- Who is JAO?
- Registration process
- Credit Cover
- Operation - Explicit Auction Platform – eCAT
- Reporting

Credit Cover - Options

- Cash deposit
  - When registering each MP is given a dedicated business account which they will use for the settlement of their invoices. Exception is made for MPs who are only on the secondary market (only receive compensations).
  - Cash used as both as credit cover and to pay invoice during settlement process
  - Any deposits exceeding the credit limit, excluding the bank guarantees, may be recovered by the MP via a fund transfer request.

- Bank guarantee
  - Shall follow template provided by JAO
  - Minimum rating set by HAR

Credit Cover - Settlement

- Settlement is on a Monthly basis
- Once a month invoices or self-billings are issued to MPs.
- The market periods invoiced in M+1 are the following:
  - Yearly auctions for M+2
  - Monthly auctions for M+1
  - Daily and ID auctions for M
  - Resale for M+1
  - Any other compensations for M

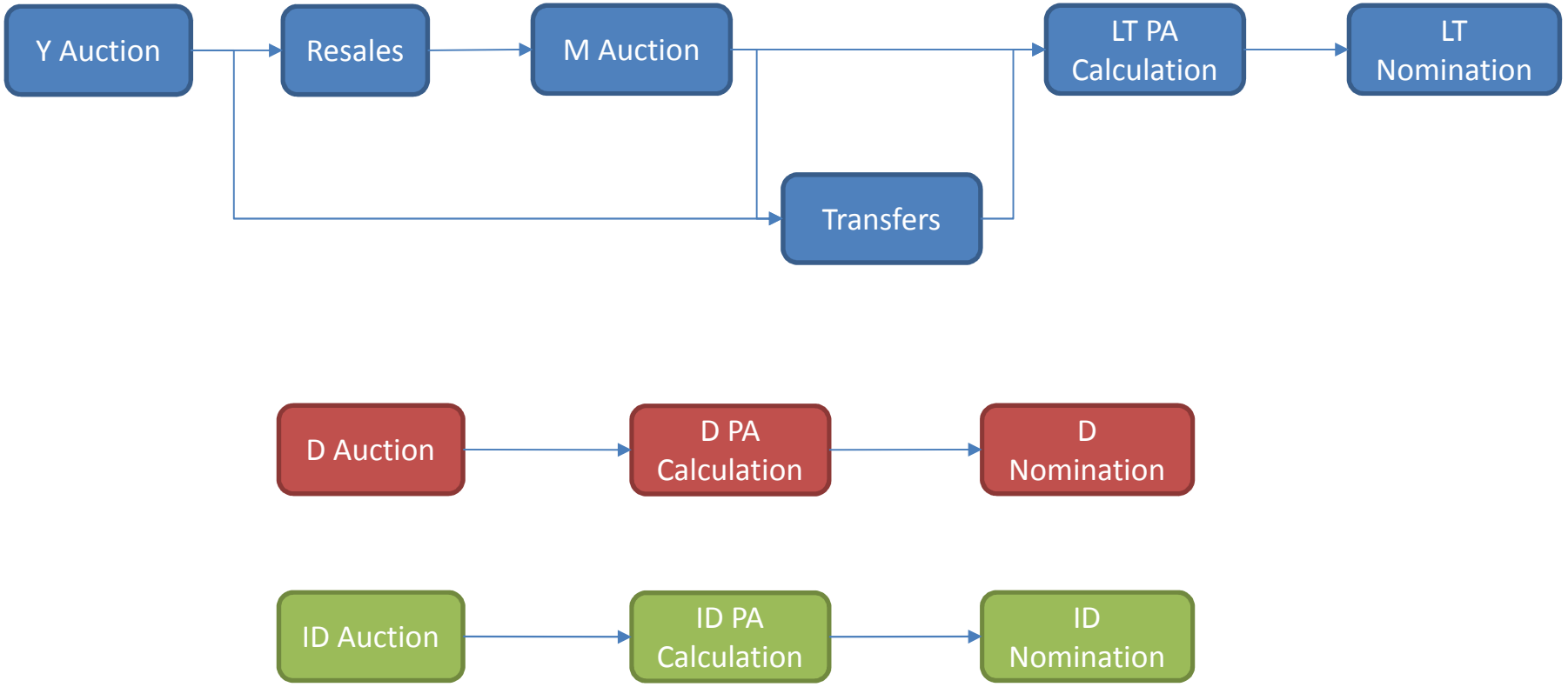
INVOICING RUN IN APRIL 2016 (M+1) WE INVOICE:
- Yearly auctions for May 2016 (M+2)
- Monthly auctions for April 2016 (M+1)
- Daily and ID auctions for March 2016 (M)
- Resale for April 2016 (M+1)
- Any other compensations (UIOSI, CFCCU, etc…) for March 2016 (M)

Credit Cover - Settlement

ACTIVITY	START	END	NOTES
Market Period M+1	01/05/2016		
3rd/4th WD M+1: Auction Tool calculates Settlement for M	04/05/2016	06/05/2016	
10th WD M+1: Market Participants are invoiced	17/05/2016	17/05/2016	JAO generates MPs documents (invoice or selfbilling)
14th WD M+1: Financial Guarantee Check	23/05/2016	23/05/2016	Check performed to see if market participants can pay invoice using cash on bank account
15th WD M+1: MPs Credit BA	24/05/2016	24/05/2016	Deadline for MPs to credit their BA enough to cover the payment of their invoices. JAO sends reminders to MPs who do not have enough coverage in their BA to pay the invoice.
16th WD M+1: MPs accounts debited	25/05/2016	25/05/2016	
17th WD M+1: MPs accounts are credited	26/05/2016	26/05/2016	

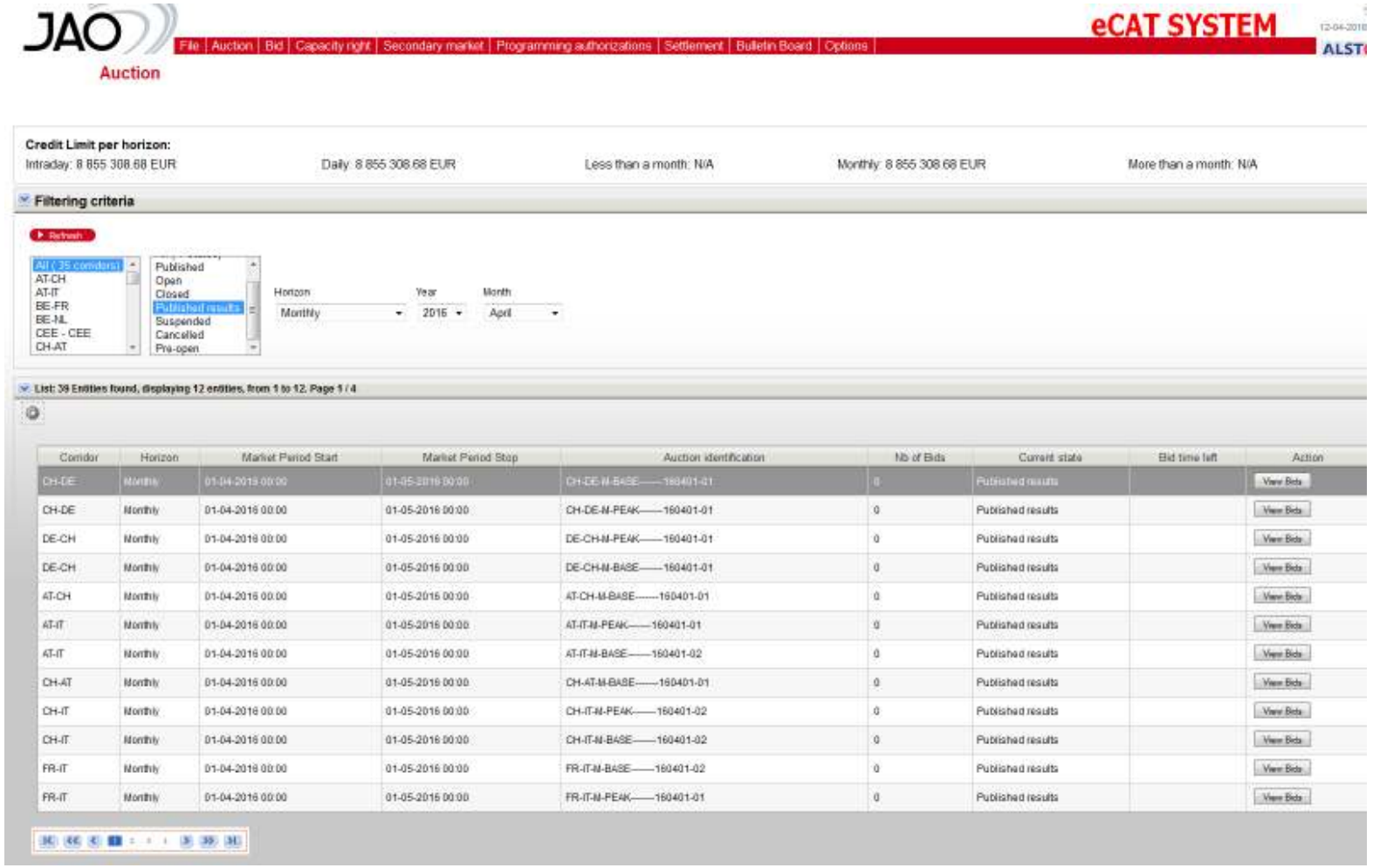
- Who is JAO?
- Registration process
- Credit Cover
- Operation - Explicit Auction Platform – eCAT
- Reporting

Explicit Auction Platform - eCAT



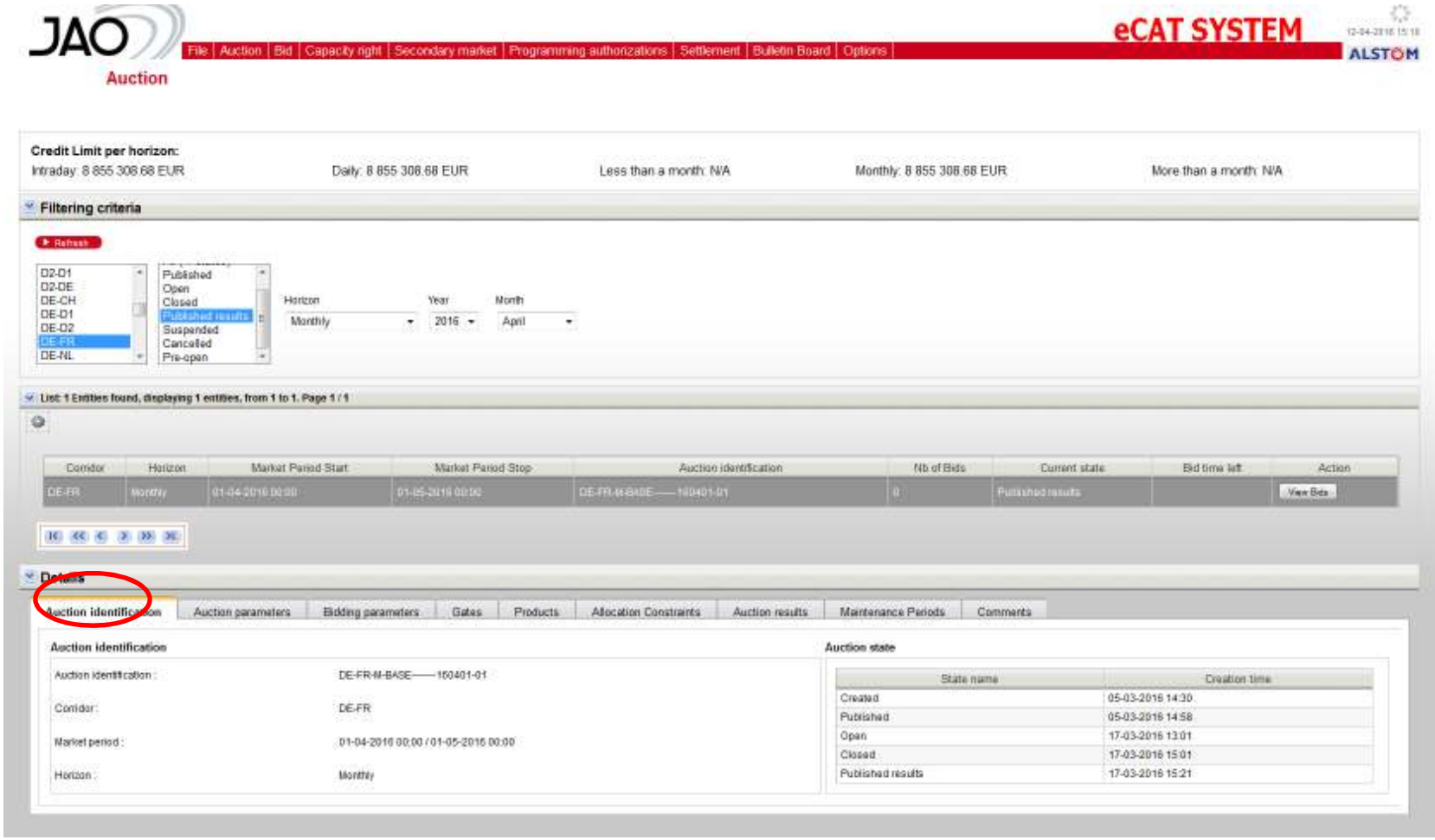
Explicit Auction Platform eCAT

Auction Display



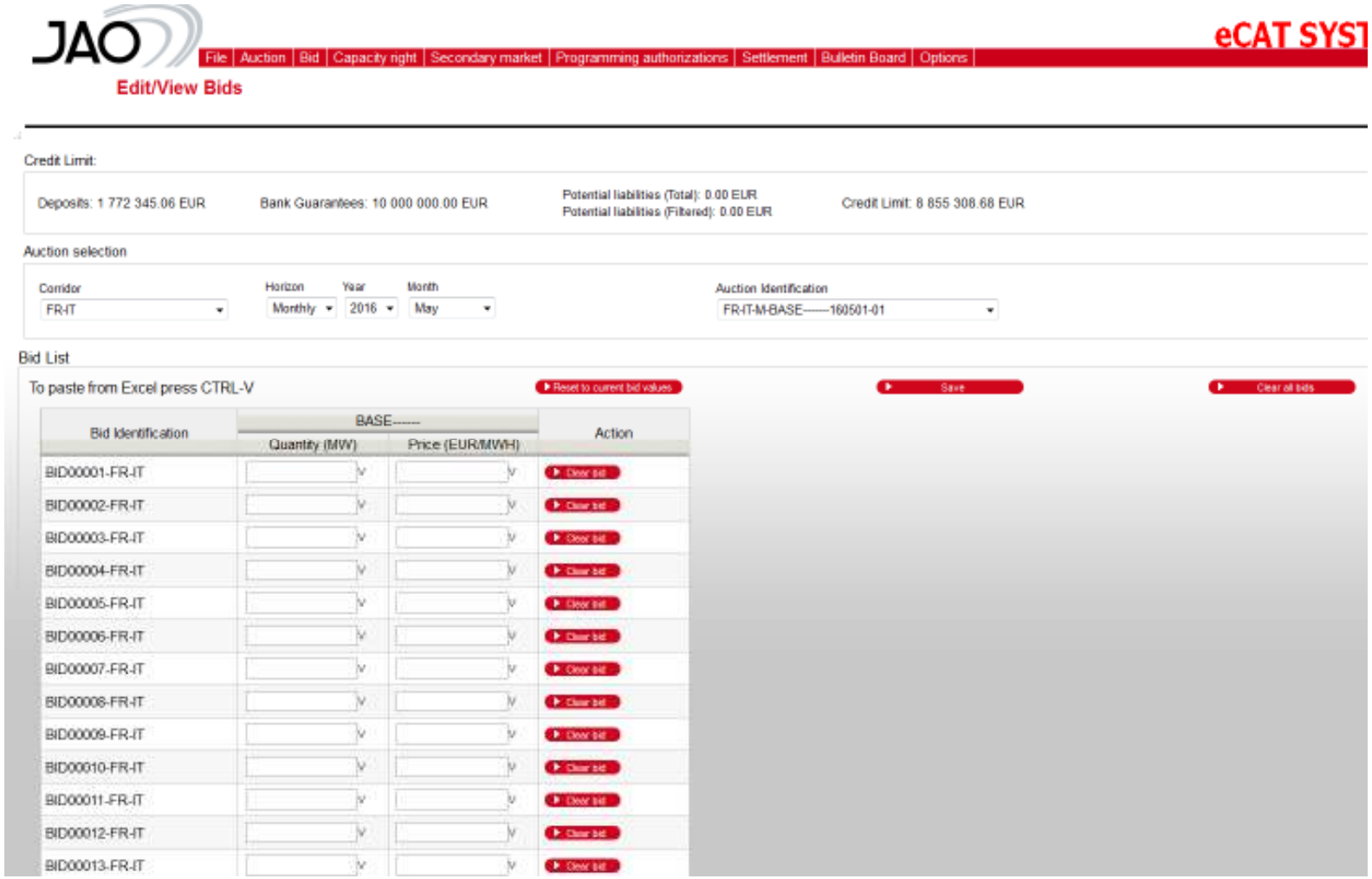
Explicit Auction Platform eCAT

Auction Display



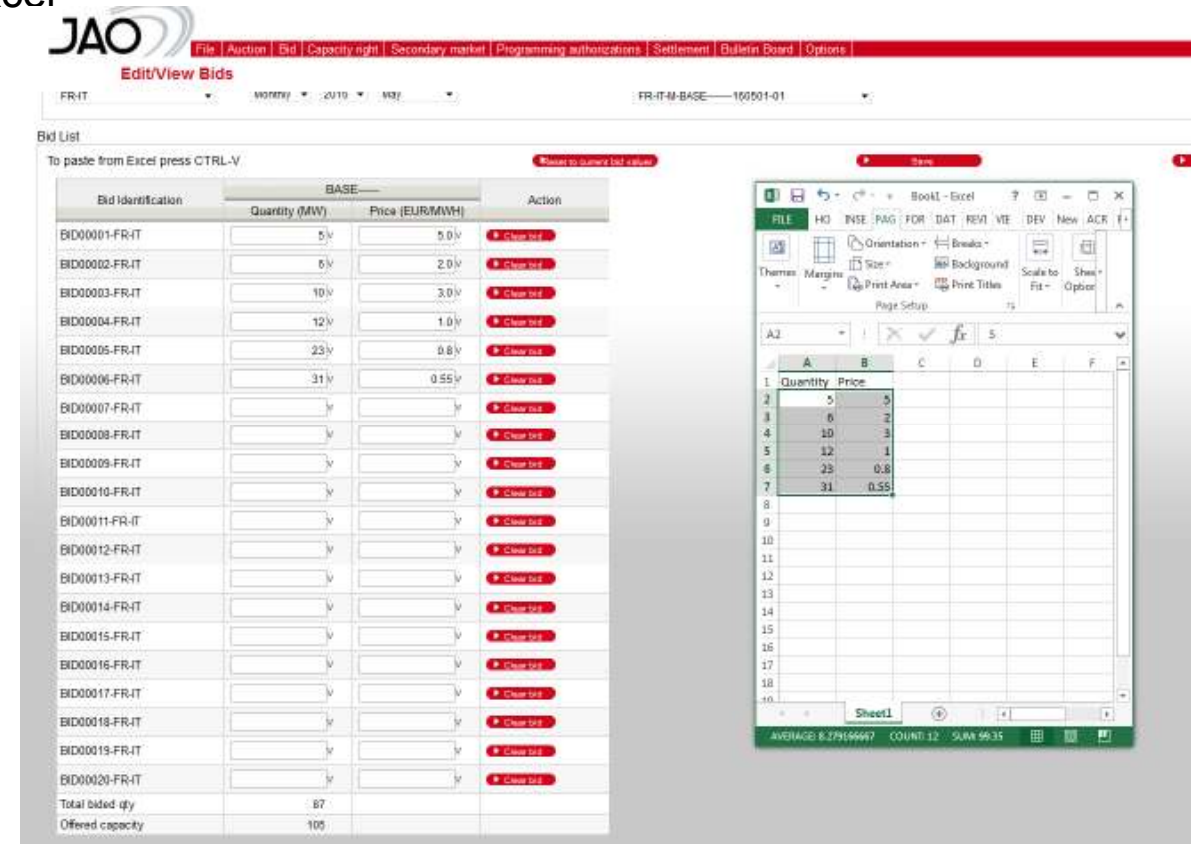
Explicit Auction Platform eCAT

New Bid



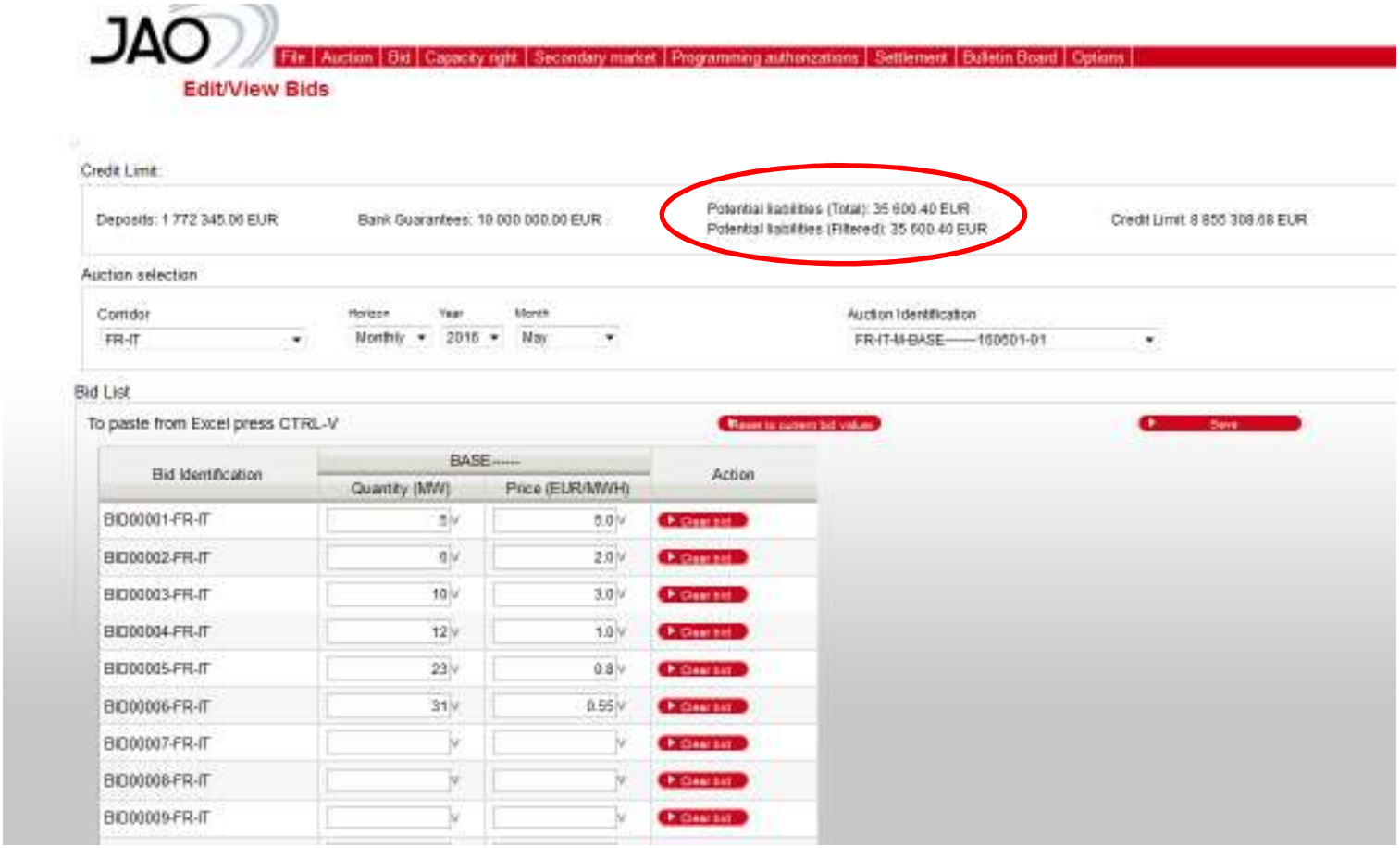
Explicit Auction Platform eCAT

- New Bid
  - entering through Trader Interface
  - copy past from excel
  - Via Web service



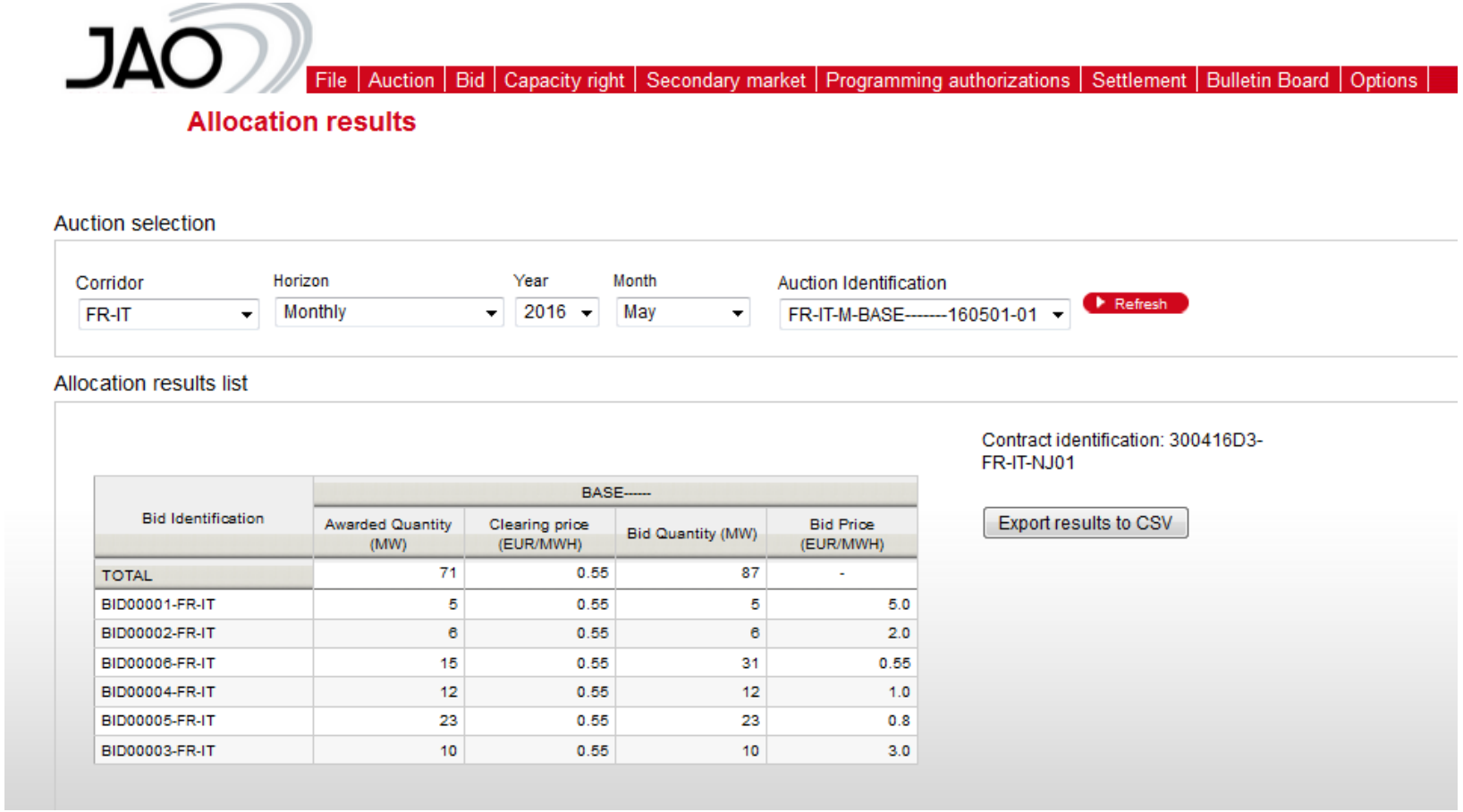
Explicit Auction Platform eCAT

Credit Limit Information



Explicit Auction Platform eCAT

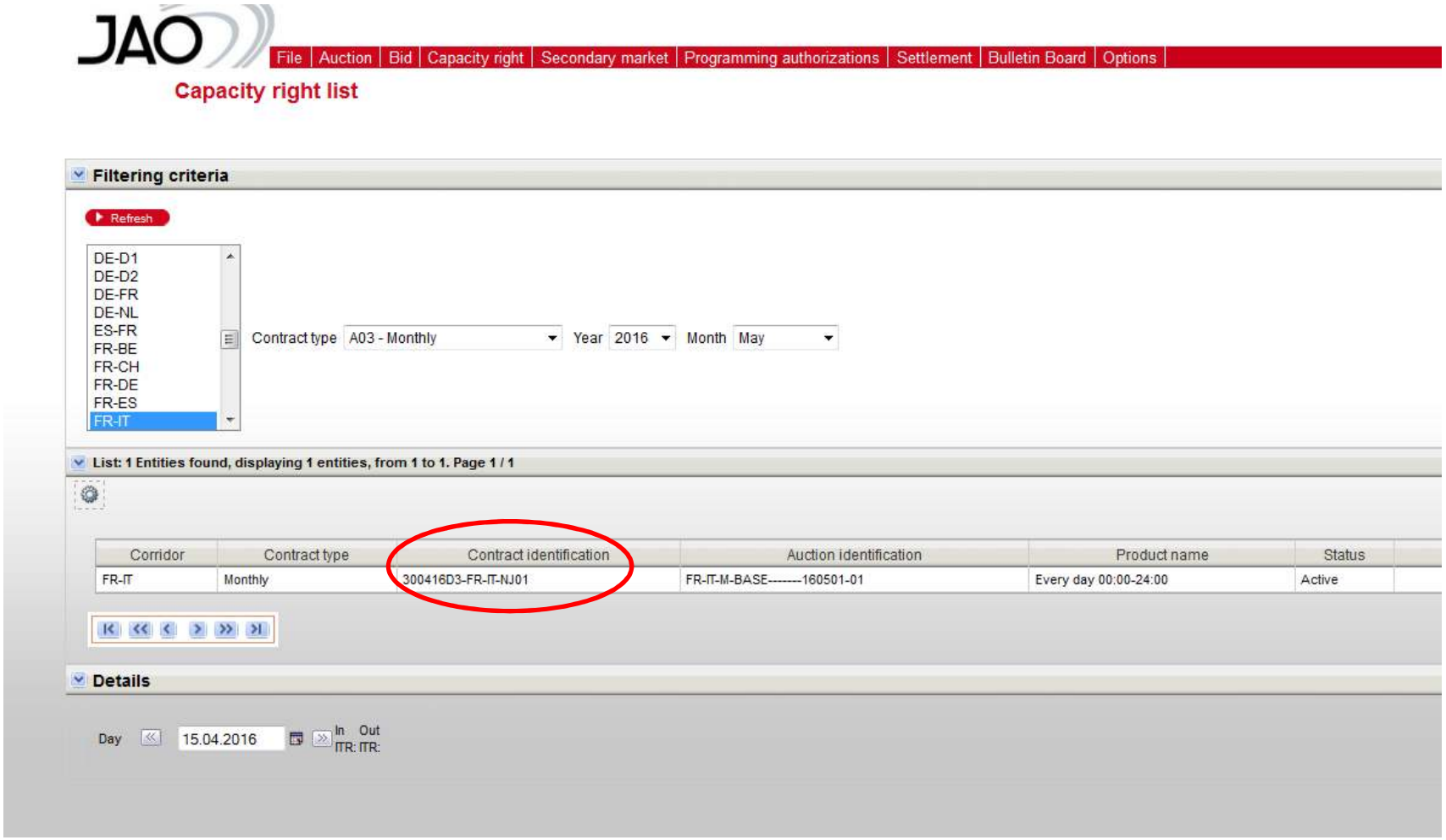
Allocation Result Display



Bid Identification	BASE------			
	Awarded Quantity (MW)	Clearing price (EUR/MWH)	Bid Quantity (MW)	Bid Price (EUR/MWH)
TOTAL	71	0.55	87	-
BID00001-FR-IT	5	0.55	5	5.0
BID00002-FR-IT	6	0.55	6	2.0
BID00006-FR-IT	15	0.55	31	0.55
BID00004-FR-IT	12	0.55	12	1.0
BID00005-FR-IT	23	0.55	23	0.8
BID00003-FR-IT	10	0.55	10	3.0

Explicit Auction Platform eCAT

Capacity Right Display



Explicit Auction Platform eCAT

New Return

File | Auction | Bid | Capacity right | Secondary market | Programming authorizations | Settlement | Bulletin Board | Options

New Resale Notification

Resale Notification General Paremeters

Refresh

Corridor	Source horizon	Target horizon	Year	Month
FR-IT	Yearly	Monthly	2016	May

Capacity right identification

Source Auction identification (Product Id)

FR-IT-Y-BASE-------160101-01(BASE------)

Target Auction identification (Product Id)

FR-IT-M-BASE-------160501-01(BASE------)

Resale notification Schedule

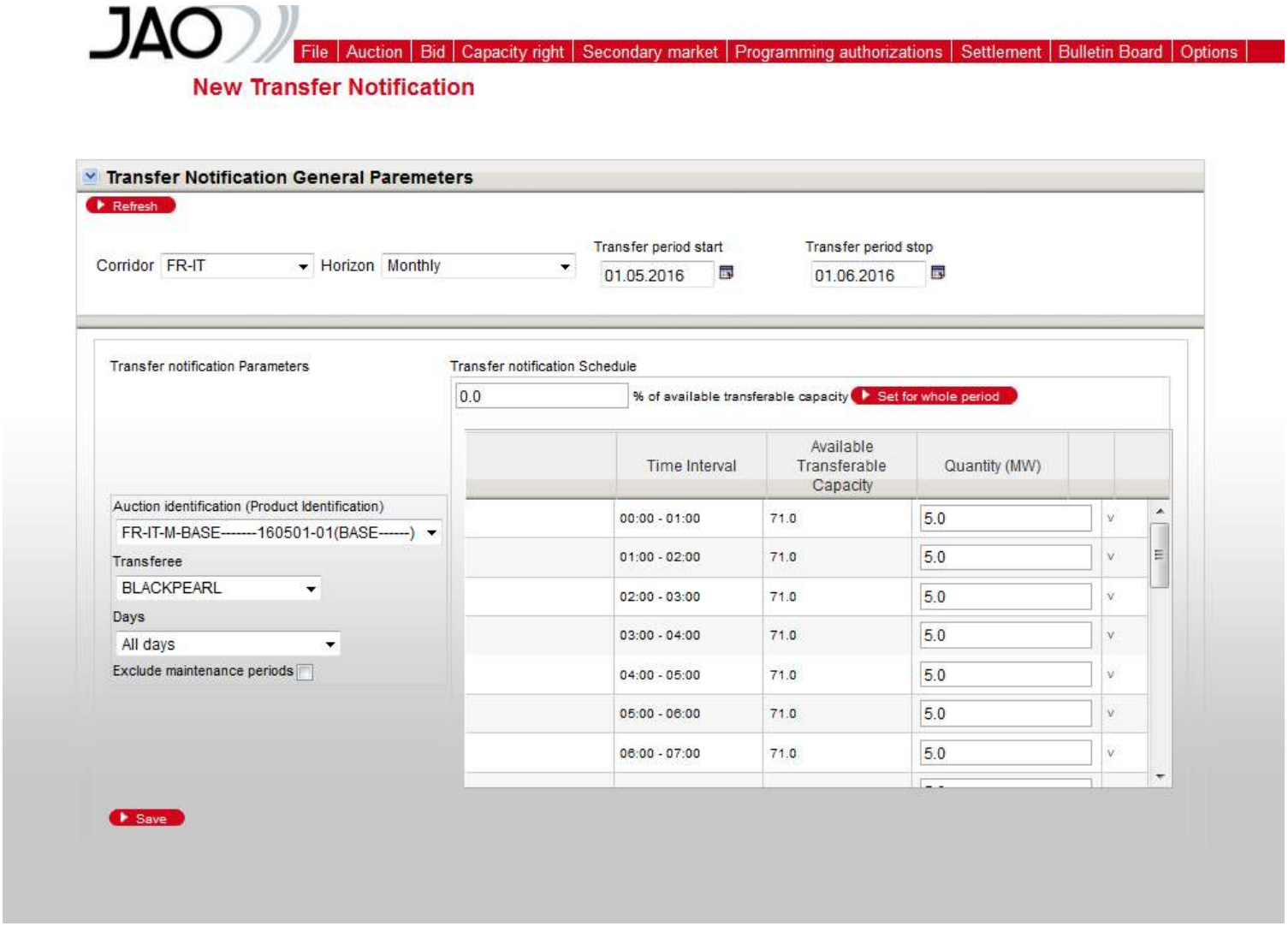
0.0 % of available releasable capacity Set for whole period

Product id	Product name	Available Releasable Capacity	Quantity (MW)	
BASE------	Every day 00:00-24:00	10.0	5	v

Save

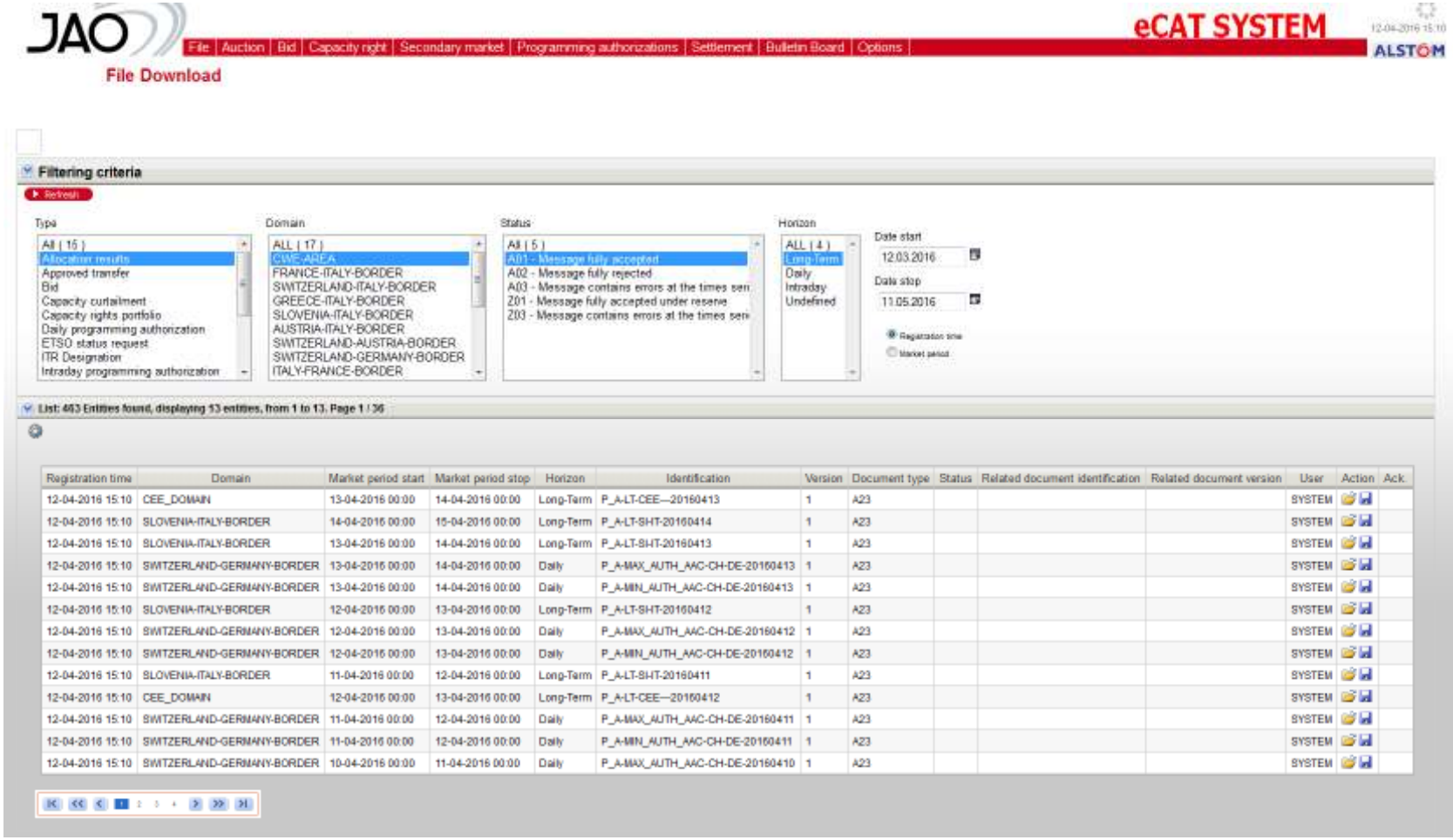
Explicit Auction Platform eCAT

New Transfer



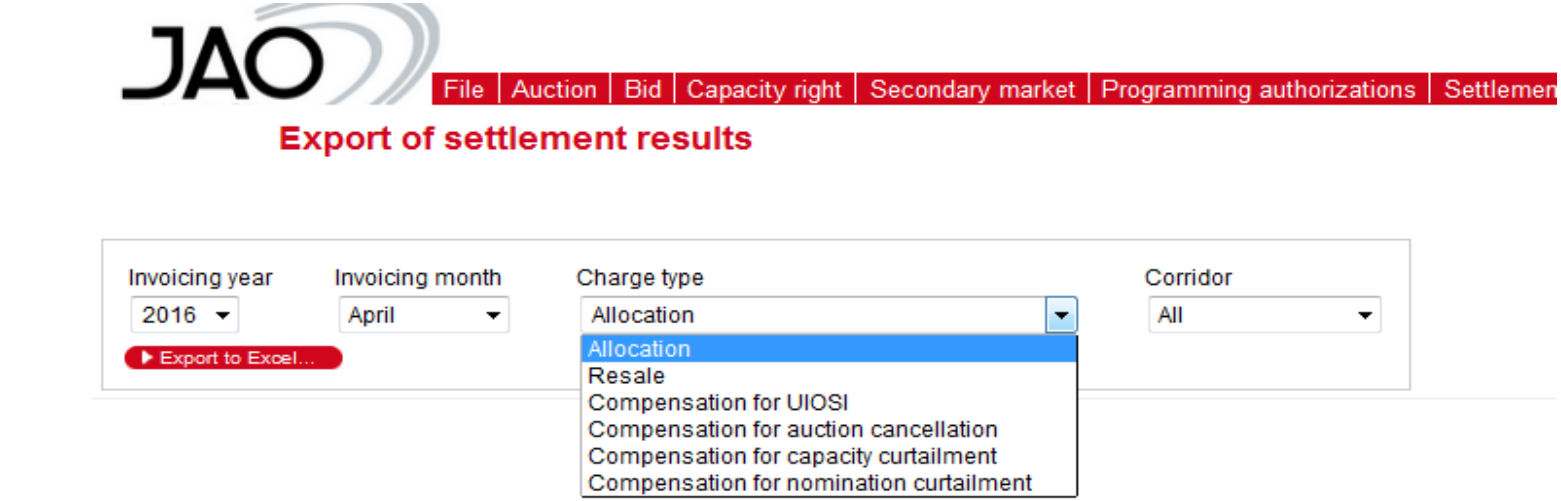
Explicit Auction Platform eCAT

File Download



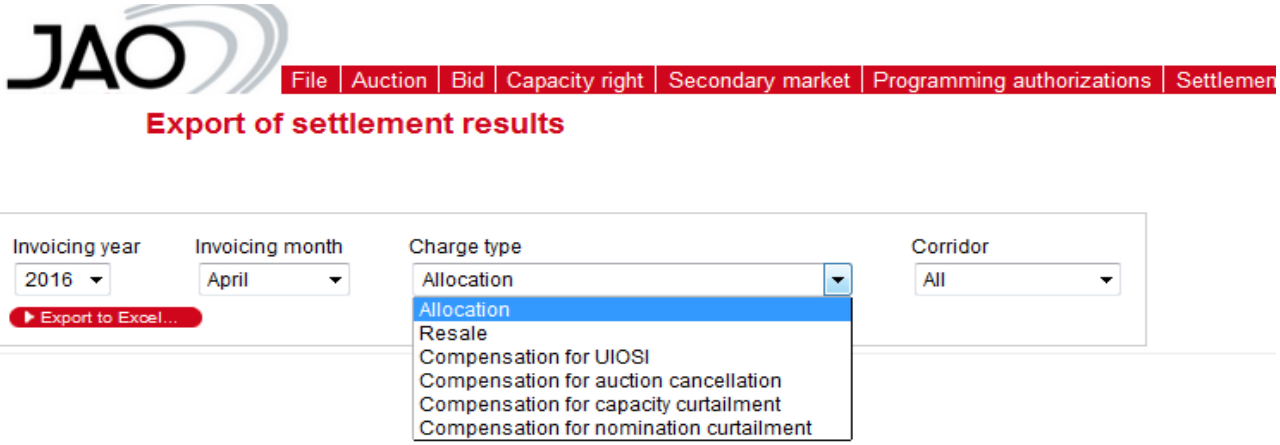
Explicit Auction Platform eCAT

Export Settlement



Explicit Auction Platform eCAT

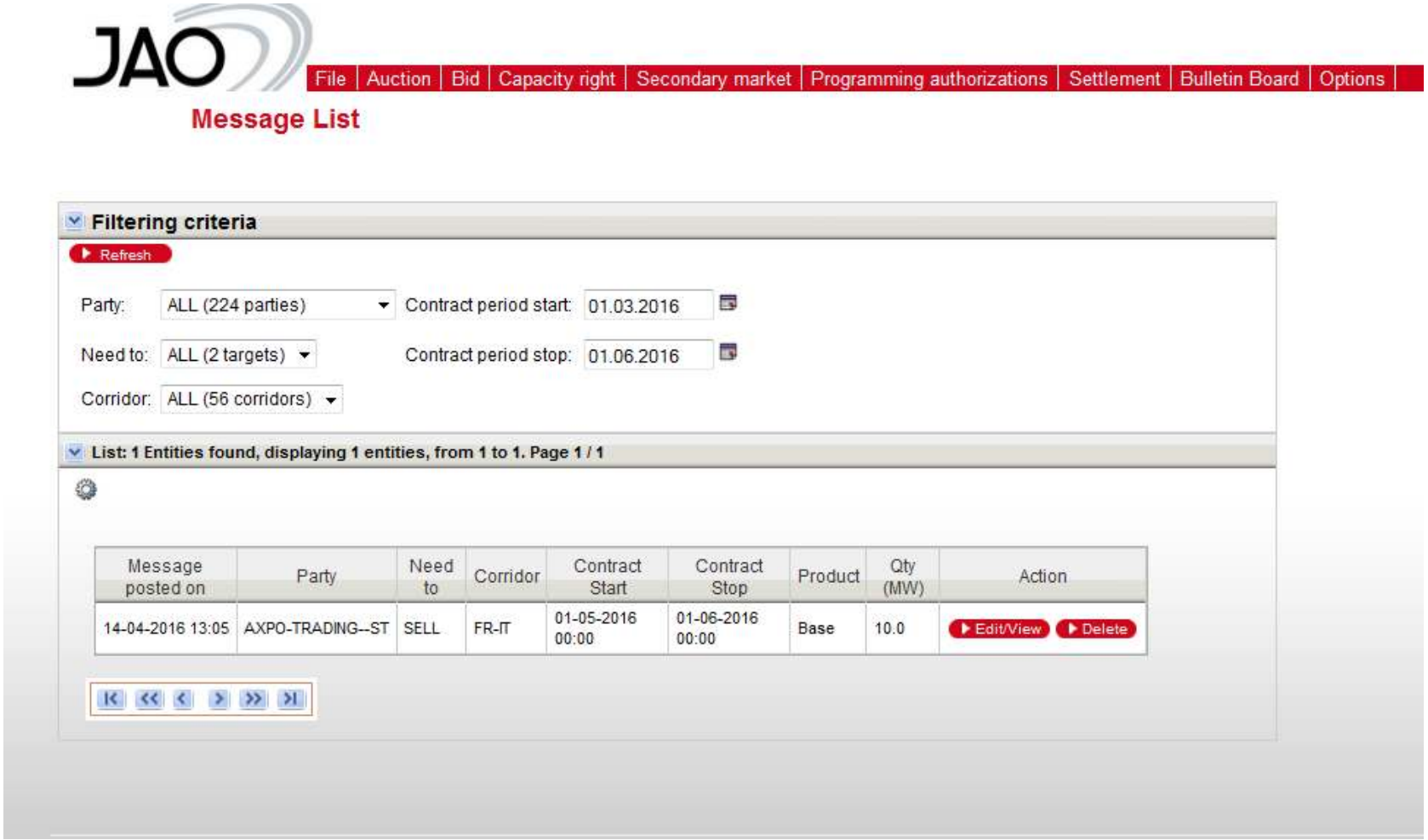
Export Settlement



	A	B	C	D	E	F	G	H	I	J	
1	Corridor	Contract ID	Source Horizor	Source Produc	Source Auction ID	Charge Type	Qty(MW)	Price(EUR/MWh)	Overall due Amount(EUR	Invoiced Amount(EUR	Paid C
2	AT-CH	010316D3-AT-CH-ED01	Daily	B01-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	0	10.280	0.00	0.00	
3	AT-CH	010316D3-AT-CH-ED01	Daily	B02-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	0	9.800	0.00	0.00	
4	AT-CH	010316D3-AT-CH-ED01	Daily	B03-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	0	10.260	0.00	0.00	
5	AT-CH	010316D3-AT-CH-ED01	Daily	B04-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	0	10.840	0.00	0.00	
6	AT-CH	010316D3-AT-CH-ED01	Daily	B05-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	1	9.970	9.97	9.97	
7	AT-CH	010316D3-AT-CH-ED01	Daily	B06-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	25	10.980	274.50	274.50	
8	AT-CH	010316D3-AT-CH-ED01	Daily	B07-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	25	11.190	279.75	279.75	
9	AT-CH	010316D3-AT-CH-ED01	Daily	B08-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	25	9.210	230.25	230.25	
10	AT-CH	010316D3-AT-CH-ED01	Daily	B09-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	0	9.450	0.00	0.00	
11	AT-CH	010316D3-AT-CH-ED01	Daily	B10-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	0	9.360	0.00	0.00	
12	AT-CH	010316D3-AT-CH-ED01	Daily	B11-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	0	9.630	0.00	0.00	
13	AT-CH	010316D3-AT-CH-ED01	Daily	B12-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	0	8.080	0.00	0.00	
14	AT-CH	010316D3-AT-CH-ED01	Daily	B13-------	AT-CH-D-DAILYPRODU-160302-01	Allocation	0	7.040	0.00	0.00	

Explicit Auction Platform eCAT

Bulletin Board



Explicit Auction Platform - eCAT

- More Information:
  - Participants User Guide and Information System Rules available on JAO's website

- Who is JAO?
- Registration process
- Credit Cover
- Operation - Explicit Auction Platform – eCAT
- Reporting

Reporting

- ENTSO-e
  - Publication on EMFIP platform
- ACER
  - Reporting of Total Allocation results on behalf of TSOs, including both selected and unselected bids in accordance with REMIT
- MIFID II
  - TSOs and service providers acting on their behalf are exempted from the MIFID II directive
  - Exemption does not apply for secondary trading of financial transmission rights; however, JAO does not consider returns and the notification of transfers as a secondary trading platform

A Northern Ireland company working for consumers

Interconnector Users Forum

Europa Hotel
2nd May 2017

Stephen Hemphill

Group Operations Manager

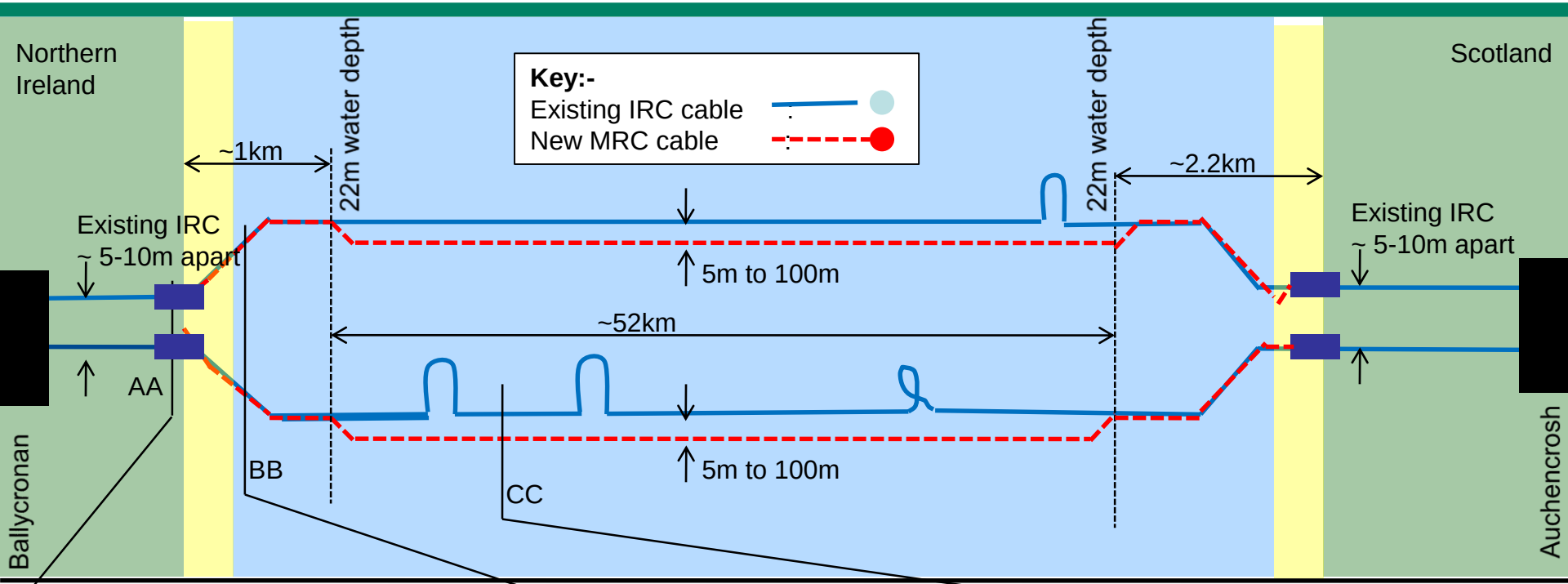
Presentation content

- Reflect 2016/17 priorities
- TEC into GB from Nov 17
- Past years availability
- Cable Fault
- Priorities into 2017/18

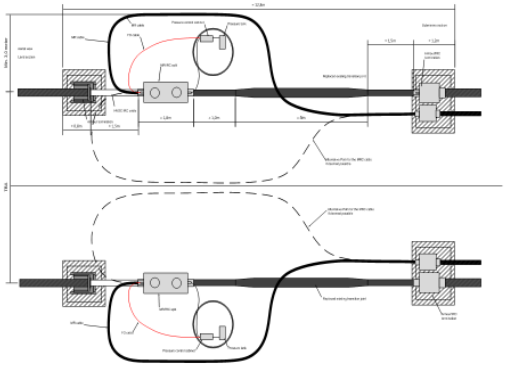
Last Year's Operational Priorities

- Complete MRC project & return to dual monopole operation at full technical capacity

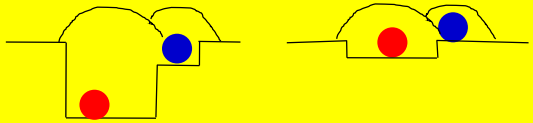
Removed reliance on IRC Insulation at Sea by Laying two new "MRC" Cables through 2015/2016



AA: Transition Joints

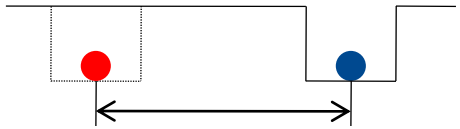


Section BB : Nearshore Section



<u>Alongside existing to within 4m</u>
New MRC cables laid alongside the Existing rockberm and rock dumped
or
New MRC cables laid in cast iron shells and rock dumped

Section CC : Offshore Section

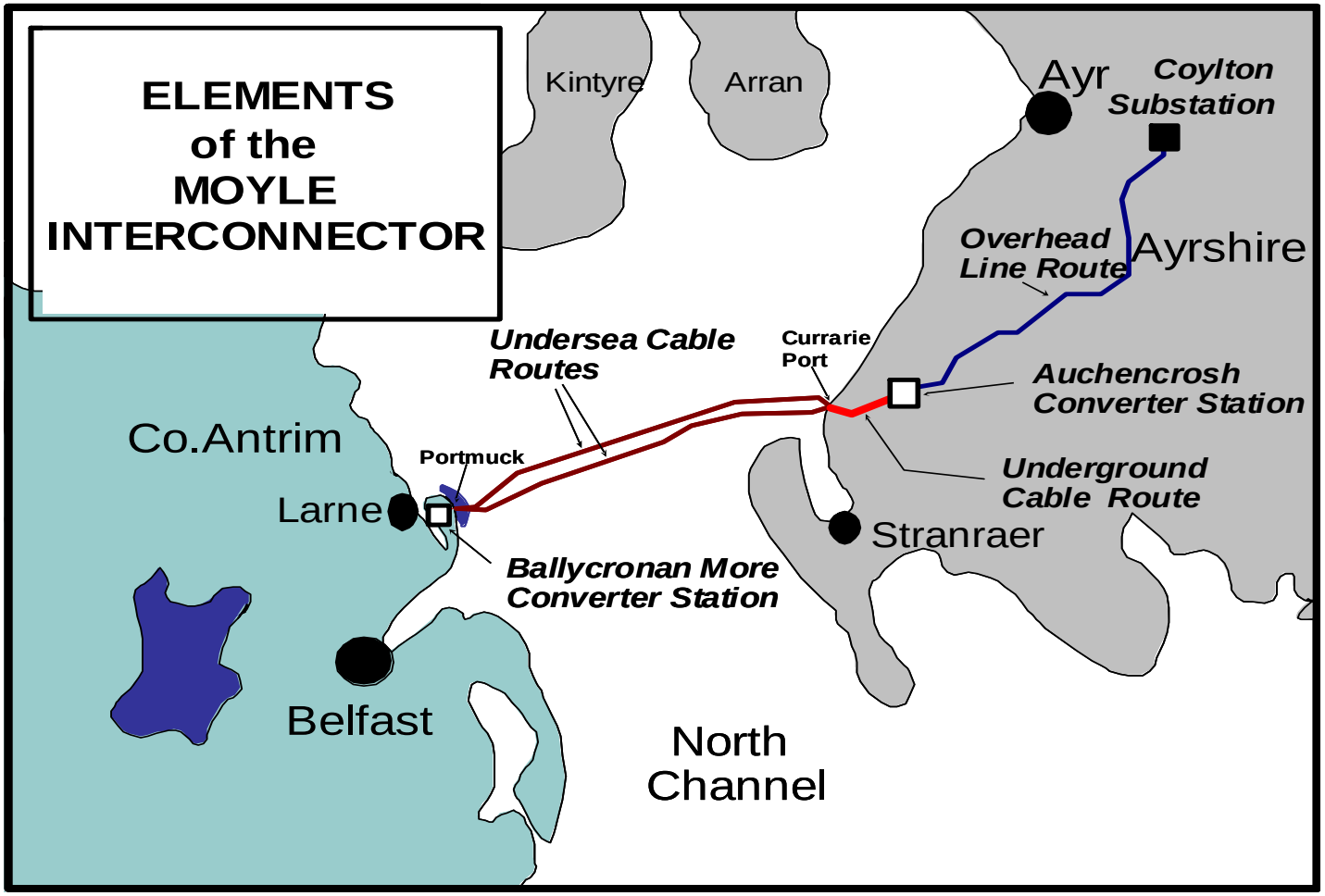


<u>Conventional Marine installation</u>
New MRC cables laid in a virgin trench in a corridor offset to the south of the existing IRC cables by 5-100m

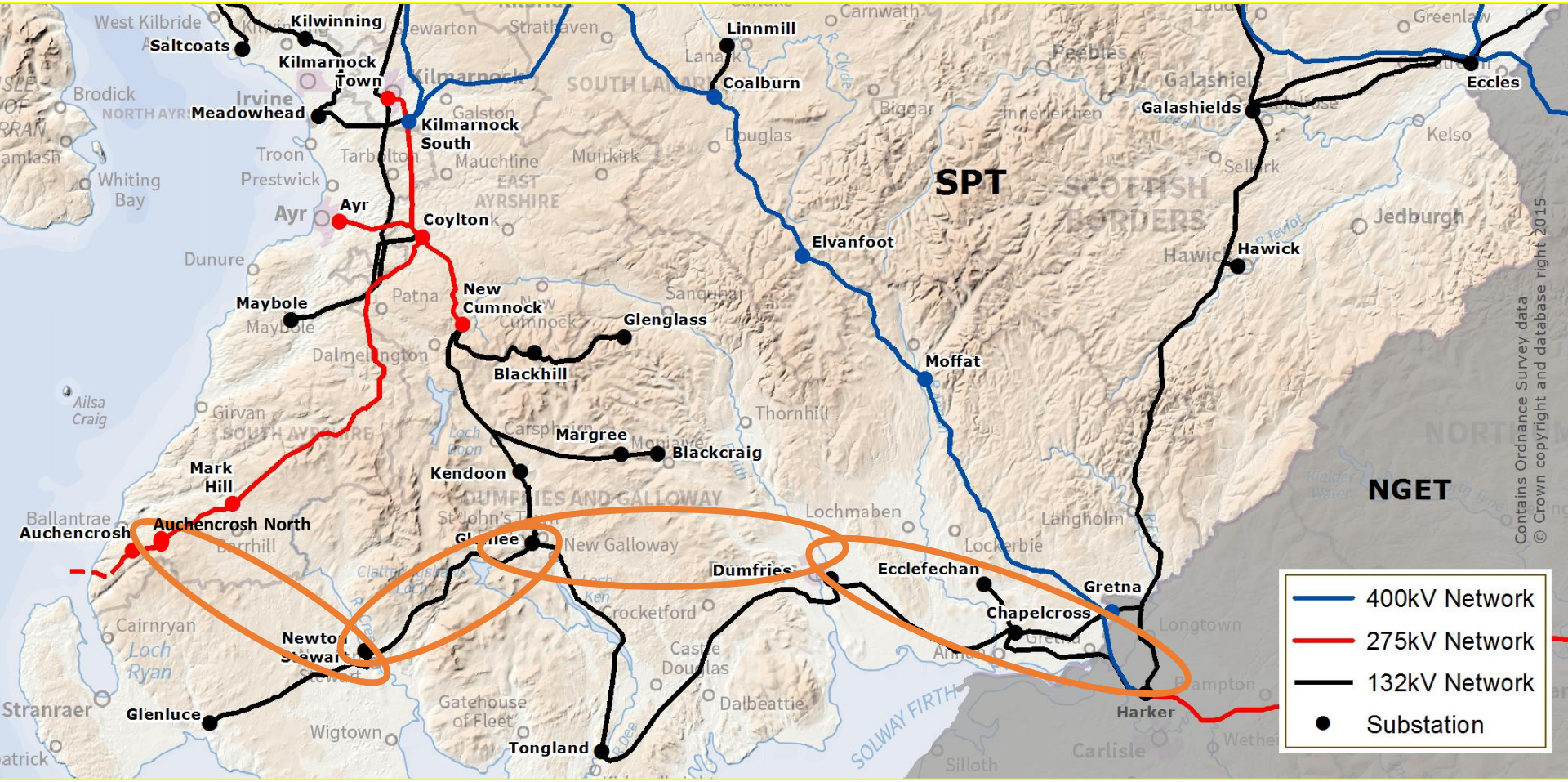
Last Year's Operational Priorities

- Complete MRC project & return to dual monopole operation at full technical capacity
- Maximising Convertor Station Maintenance during NGT 16 week Outage
- Control System aging …
    - Replacement
        - Appoint Owners Engineer End 2016
        - Procurement 2017
        - Design 2018
        - Testing 2019
        - Installation & commission 2020
    - Obsolescence management in the interim
- Work required in NI and GB AC Networks to maximize enable full technical capacity of 500MW

Single circuit connection Scotland



Dumfries & Galloway Reinforcement Scheme



A Northern Ireland company working for consumers

mutualenergy

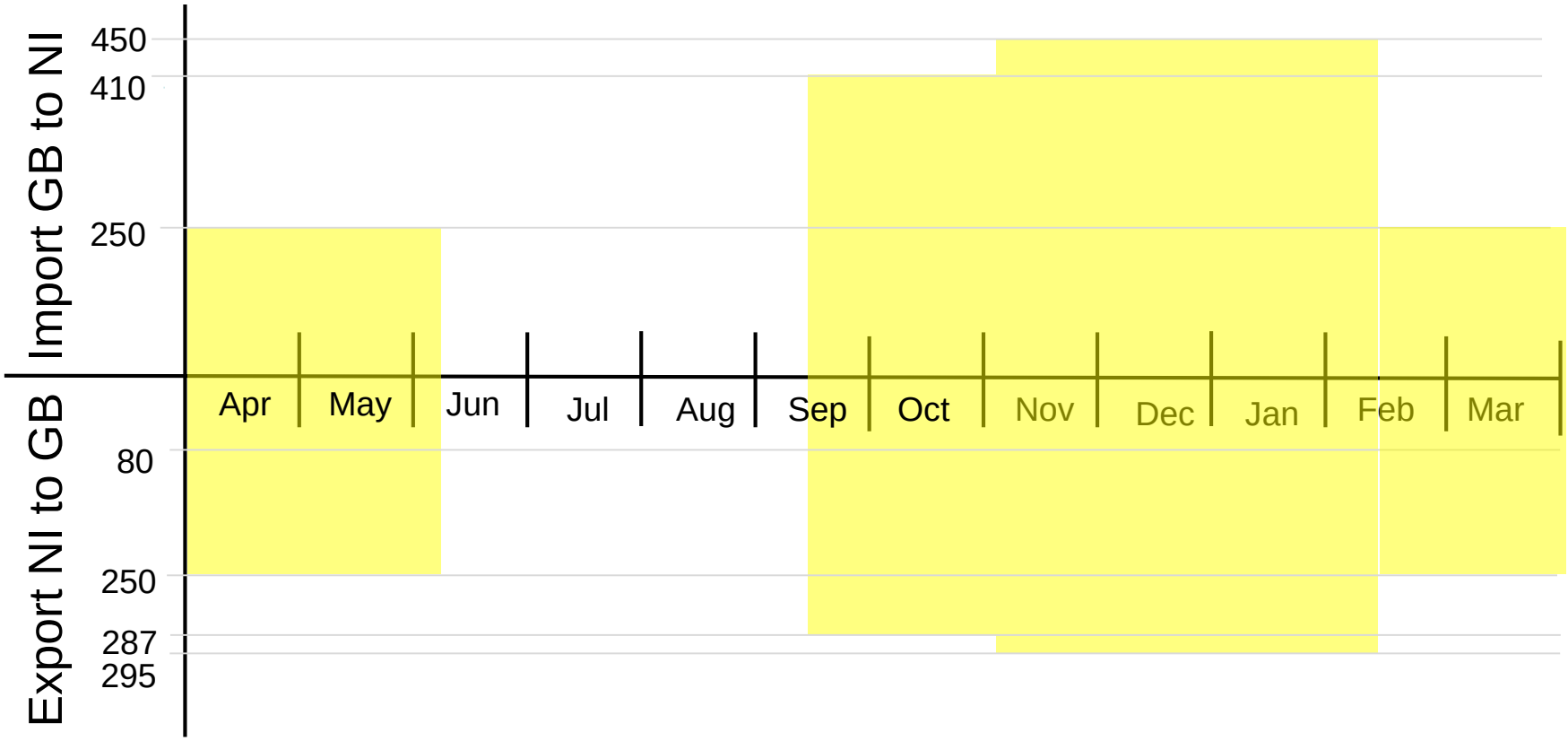
Increased levels of TEC against contracted position, plus the ability to flow above this where conditions allow

Version C2.1.0.1.M

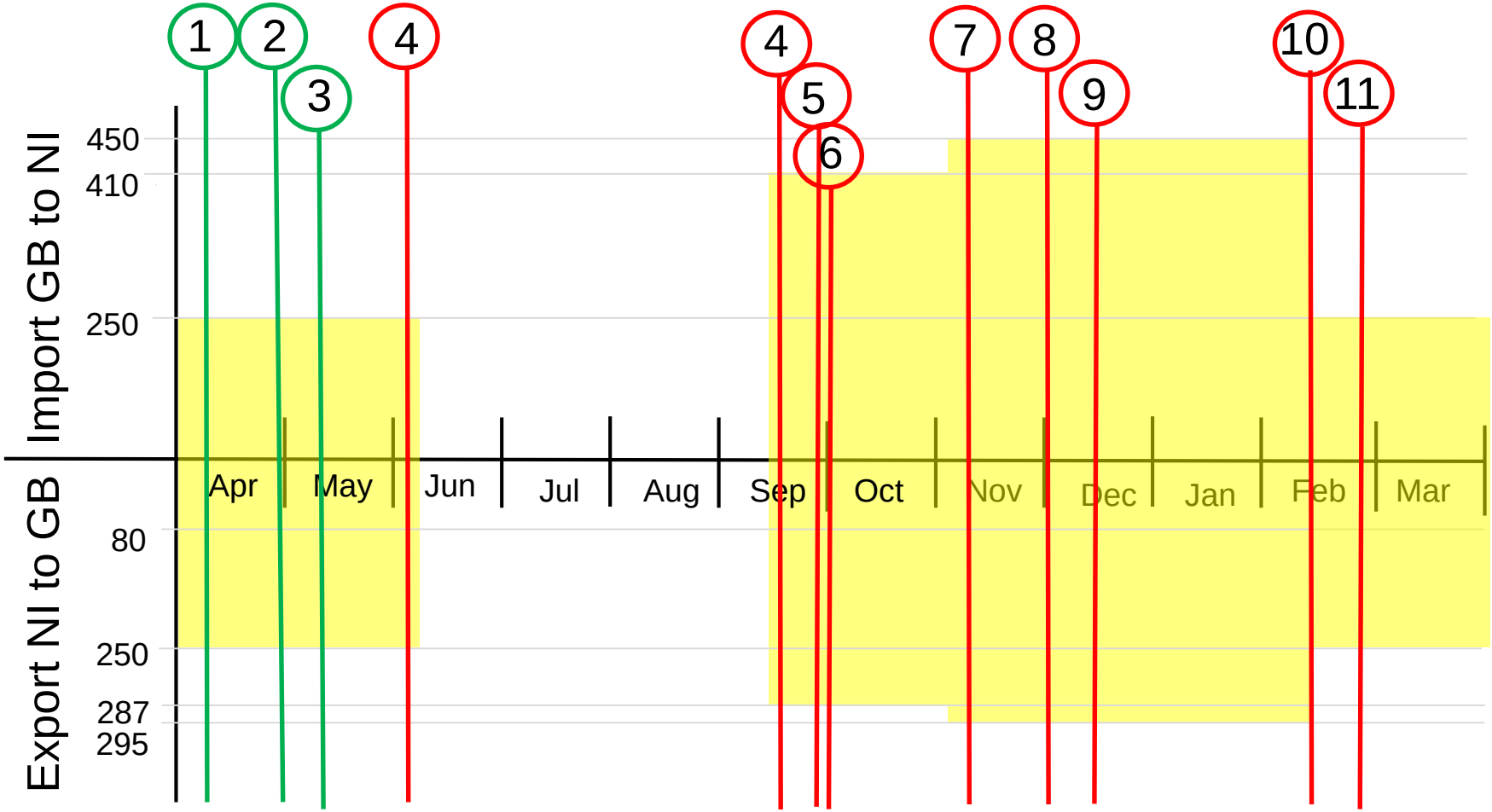
nationalgrid

Dates	Contracted	TEC	CACM	Solution
Up to 2017	~295	~295	~295	~295
Nov 2017	80	80	80	500 (80)
Dec 2019	80	307	500 (307)	500 (307)
Jun 2020	80	250	500 (250)	500 (250)
Nov 2021	80	160	500 (160)	500 (160)
Apri 2022	80	500	500 (500)	500 (500)
Beyond 2022	80	500	500 (500)	500 (500)

2016/17 Scheduled Availability

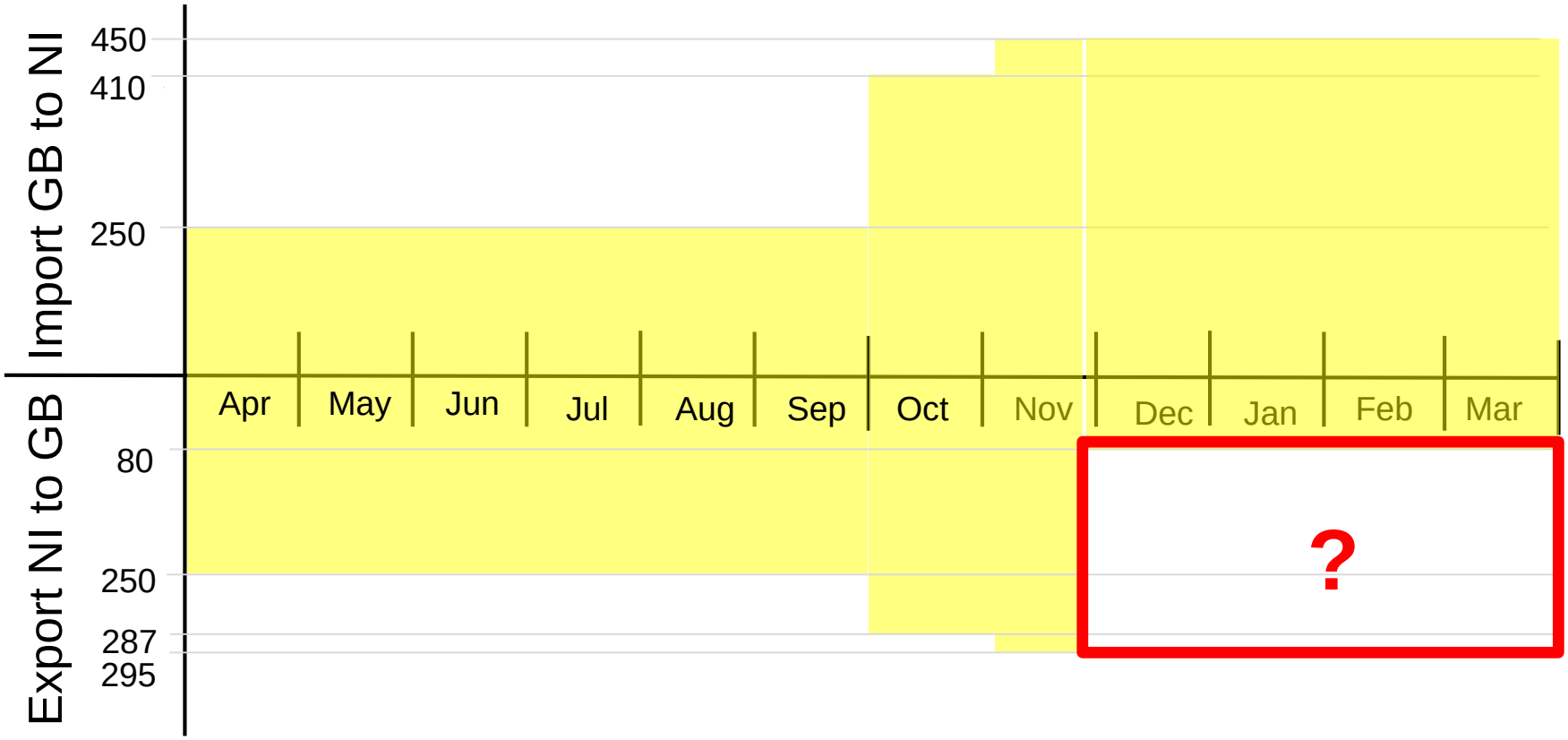


2016/17 Availability



Start Date and Time	End Date and Time	Pole	Reason	Load Lost MW	Actual Duration Hrs
13/04/2016 10:06:48	15/04/2016 11:26:02	1	Pole 1 MRC cable Installation - Pole 2 outage, for Sheet Piling at Currie Port		49.33
26/04/2016 06:07:19	28/04/2016 15:38:05	1	Pole 1 MRC cable installation - Pole 2 outage, for rock breaking at Port Muck		57.52
06/05/2016 18:34:32	06/05/2016 19:03:33	2	Pole 2 VC Cooling Fans Over speed Fault =22U61+UT3-AO2.		0.48
03/06/2016 12:28:20	03/06/2016 13:06:52	2	Pole 2 External Protection Trip	68	0.63
22/09/2016 16:08:43	22/09/2016 17:03:45	2	Pole 2 trip - Low expansion tank level - leaking cooling pump	49	0.92
29/09/2016 18:53:09	29/09/2016 21:02:31	2	Pole 2 Trip, Valve Cooling "Water level expansion tank Trip"	45	2.15
30/09/2016 22:01:22	30/09/2016 22:52:33	2	Pole 2 Failed to Deblock	13	0.85
07/11/2016 19:45:39	07/11/2016 21:26:43	2	Auch - Pole 1 Trip DC overvoltage due to commutation failure	20	1.68
01/12/2016 22:52:29	02/12/2016 00:23:13	1	Auch - Pole 1 Trip due to Return Conductor Overvoltage Protection	0	1.52
15/12/2016 11:25:22	15/12/2016 11:29:18	2	Pole 2 Failed to Block, therefore manually tripped.	0	0.07
18/02/2017 15:25:06	On Going	1	Pole 1 Cable Fault TRP:RCOP-1 (59RC-1) Overvoltage Trip	0	
23/02/2017 11:32:07	24/02/2017 01:06:44	2	Auch - Pole 1 Trip due to Coylton Line fault Yellow Phase	0	13.57

2017/18 Projected Availability



Sat 18th

- **Pole 1 Trip @ 1525**
- Siemens to site 1615 – sealing ends checked and land route vantage survey undertaken
- TFR data sent for analysis to Siemens HVDC support Erlangen. TFR trace showed Earth fault current IdEE of >2.5kA. The two fault messages on HMI 'Travelling wave protection' (TWP) trip and 'DC Cable under voltage protection' (DCCUVP) are associated with a HV cable fault.

Sun 19th

- Open cable test to assess integrity of high voltage conductor failed
- LV conductor proven to hold 1kV – suspected no fault. Fibre optic also proved intact.
- Bridge tests on HV indicate fault on HV and in a wide window KP35 – KP37
- **Fault established to be on HV conductor and suspected marine**
- Siemens Erlangen confirm characteristics consistent with high voltage failure

Mon 20th

- Shipping traffic checks – suspicion Ice Beam
- Further bridge testing
- Unsuccessful application of TDR

Tue 21st

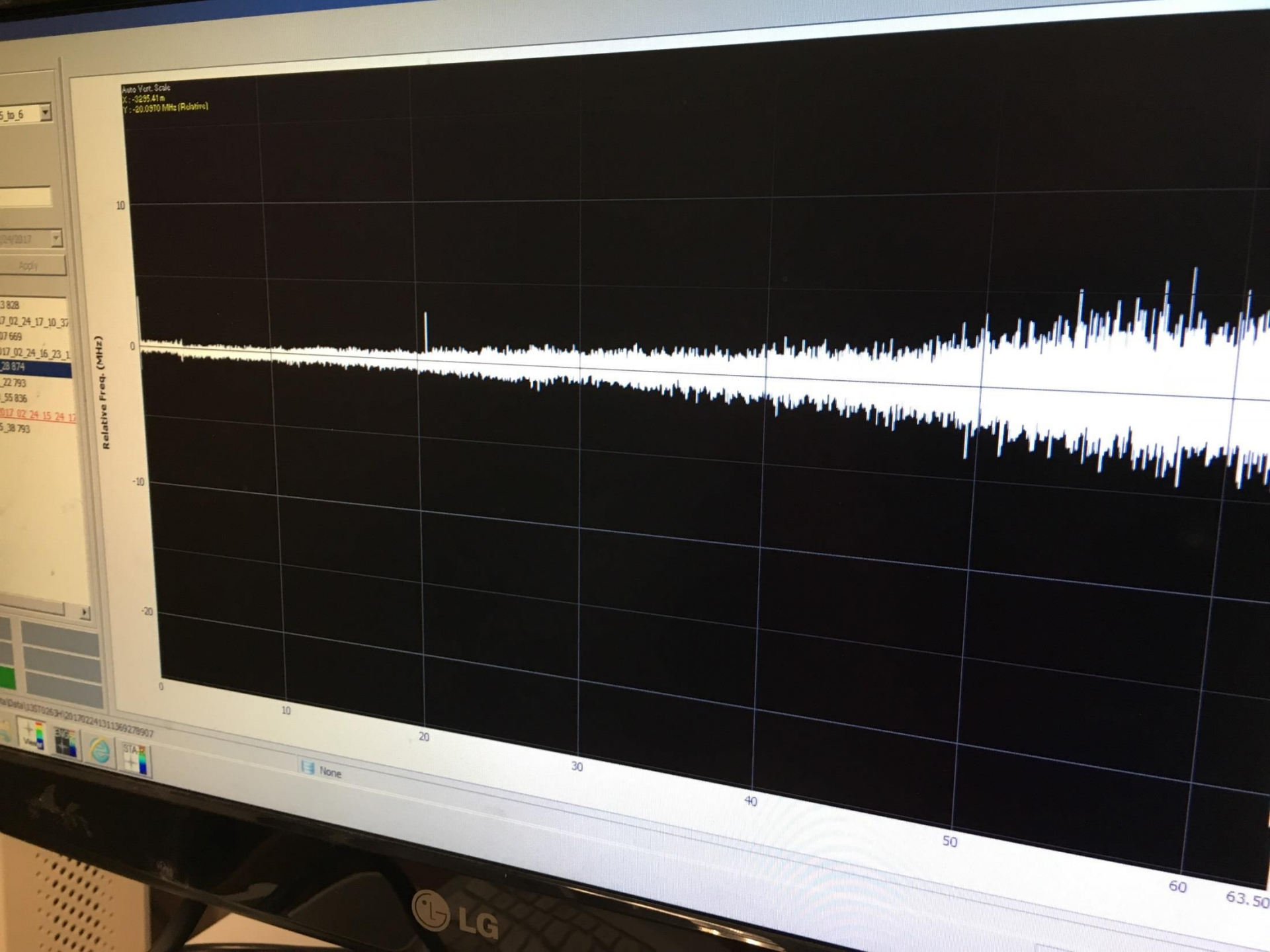
- Set up Omnisens distributed temperature sensing (DTS) at Ballycronan CS
- DC current injection (circa 30A and 40V) into fault and monitoring temperature along the length of the fibre optic embedded within the power cable
- Heat trace identified – also possible adjacent splices in FO possible reference points

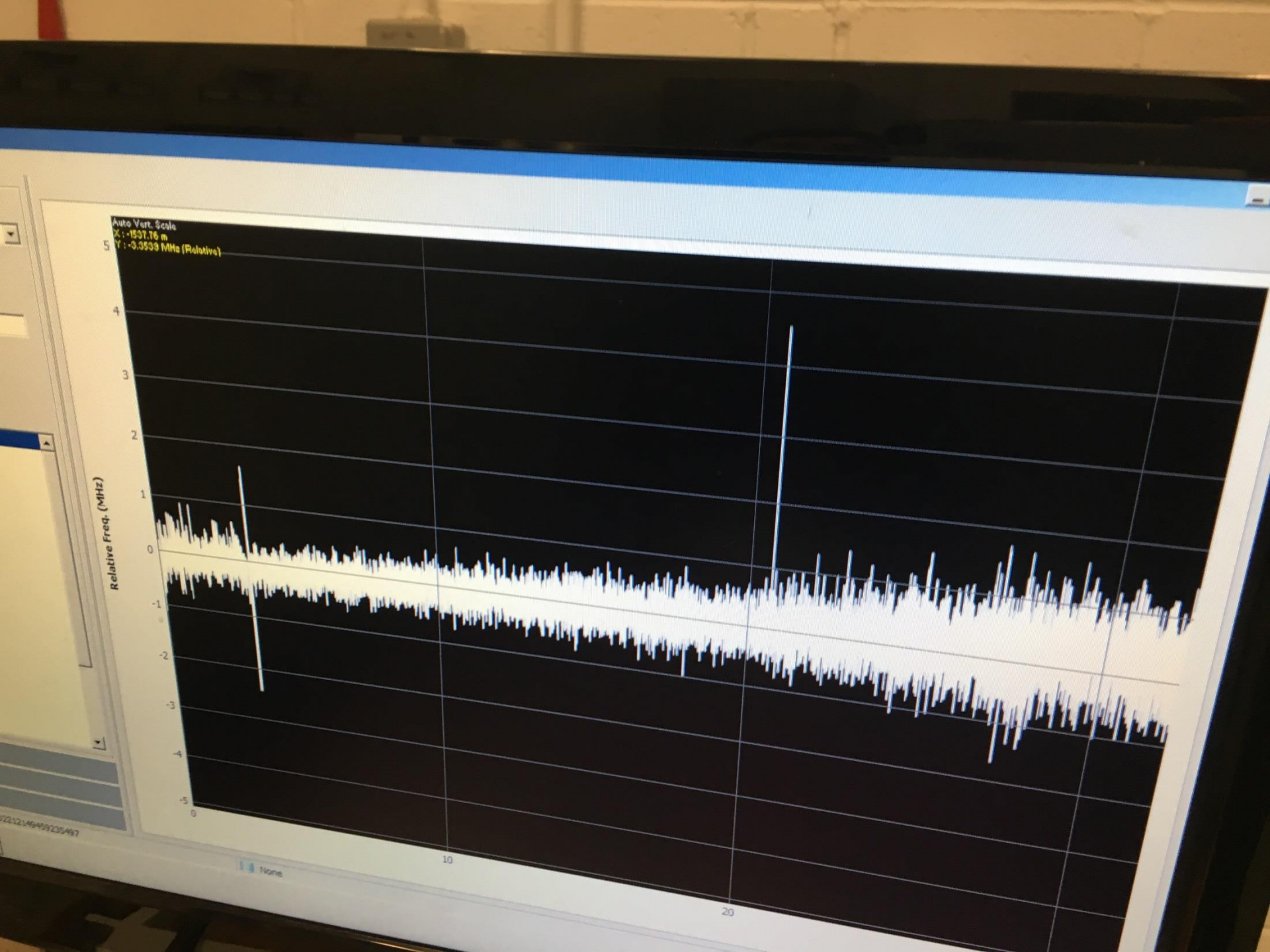
Wed 21st

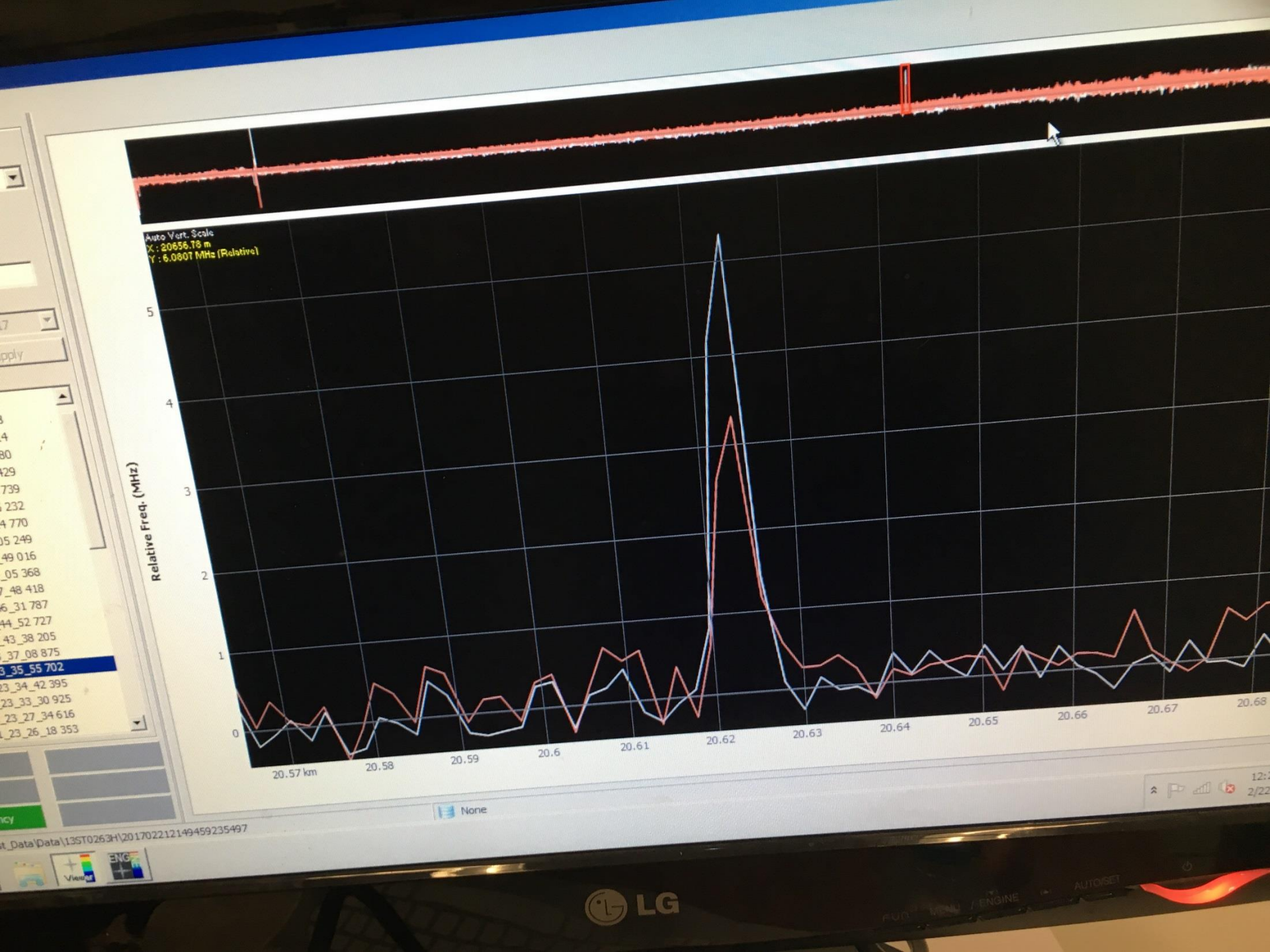
- LIRA measurements undertaken by Wirescan from Ballycronan and Auchencrosh
- **Analysis of DTS data suggests failure is around joint made in 2011 repair**
- Further shipping checks & request to British Geological Survey RE Seismic Activity

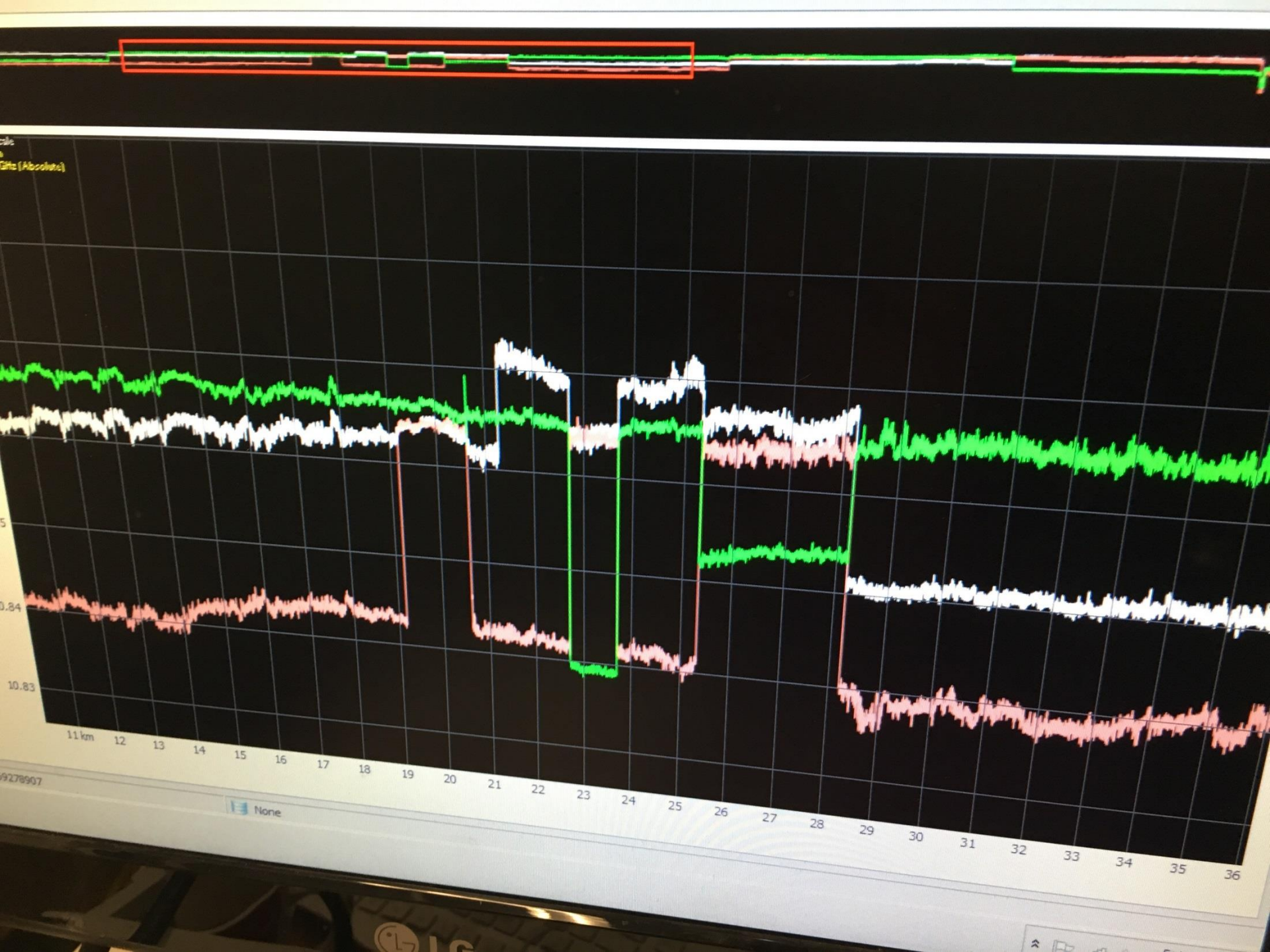
Thur 22nd

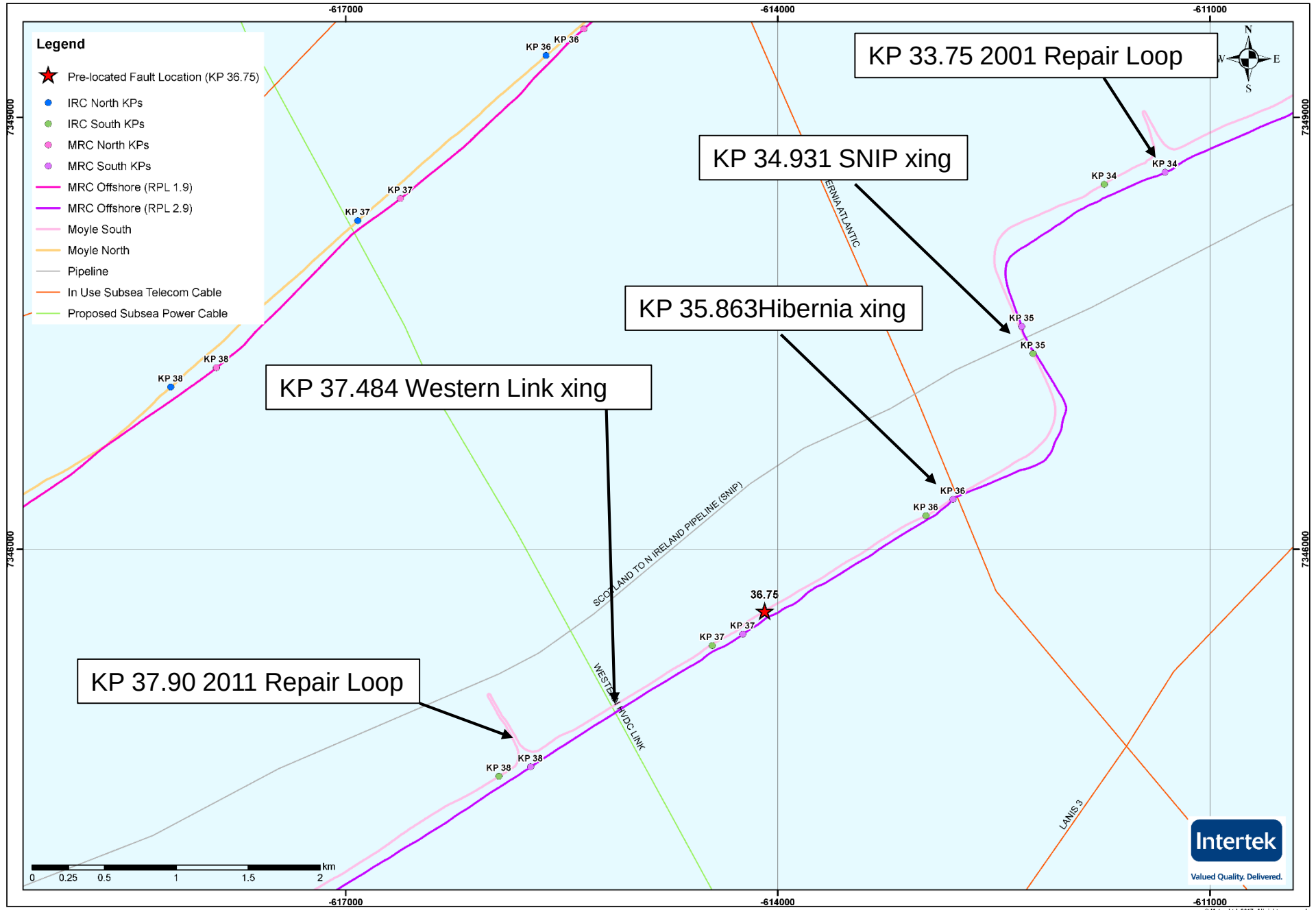
- Western Link opportunity survey of seabed in approximately 250m either east of fault location through to their crossing point west
- Pole 2 tripped due to issues with 275kV overhead line in Scotland – opportunity taken for further bridge measurements by looping the two HV conductors


Auto Vert. Scale
X: -3295.41 m
Y: -20.0970 MHz (Relative)
Relative Freq. (MHz)
10
0
-10
-20
0
10
20
30
40
50
60
63.50
None
LG


Auto Vert. Scale
X : -1537.76 m
Y : -0.3539 MHz (Relative)
Relative Freq. (MHz)
5
4
3
2
1
0
-1
-2
-3
-4
-5
0
10
20
None


Auto Vert. Scale
X : 20656.78 m
Y : 6.0807 MHz (Relative)
Relative Freq. (MHz)
5
4
3
2
1
0
20.57 km
20.58
20.59
20.6
20.61
20.62
20.63
20.64
20.65
20.66
20.67
20.68
None
LG


11 km
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
None

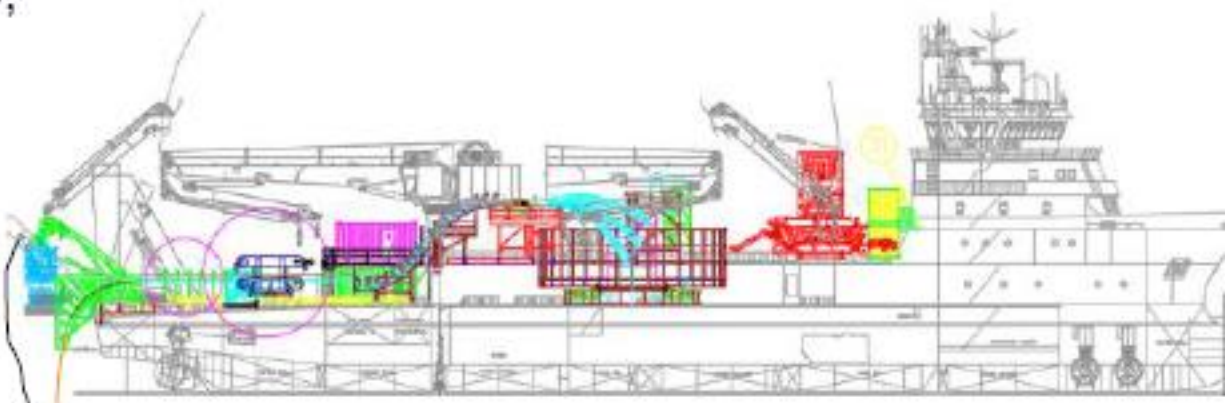

KP 33.75 2001 Repair Loop
KP 34.931 SNIP xing
KP 35.863Hibernia xing
KP 37.484 Western Link xing
KP 37.90 2011 Repair Loop
Legend
Pre-located Fault Location (KP 36.75)
IRC North KPs
IRC South KPs
MRC North KPs
MRC South KPs
MRC Offshore (RPL 1.9)
MRC Offshore (RPL 2.9)
Moyle South
Moyle North
Pipeline
In Use Subsea Telecom Cable
Proposed Subsea Power Cable
-617000
-614000
-611000
7349000
7346000
KP 36
KP 37
KP 38
KP 34
KP 35
36.75
SCOTLAND TO N IRELAND PIPELINE (SNIP)
WESTERN HVDC LINK
HIBERNIA ATLANTIC
LANIS-3
0 0.25 0.5 1 1.5 2 km
Intertek
Valued Quality. Delivered.

Two Staged Marine Repair Campaign

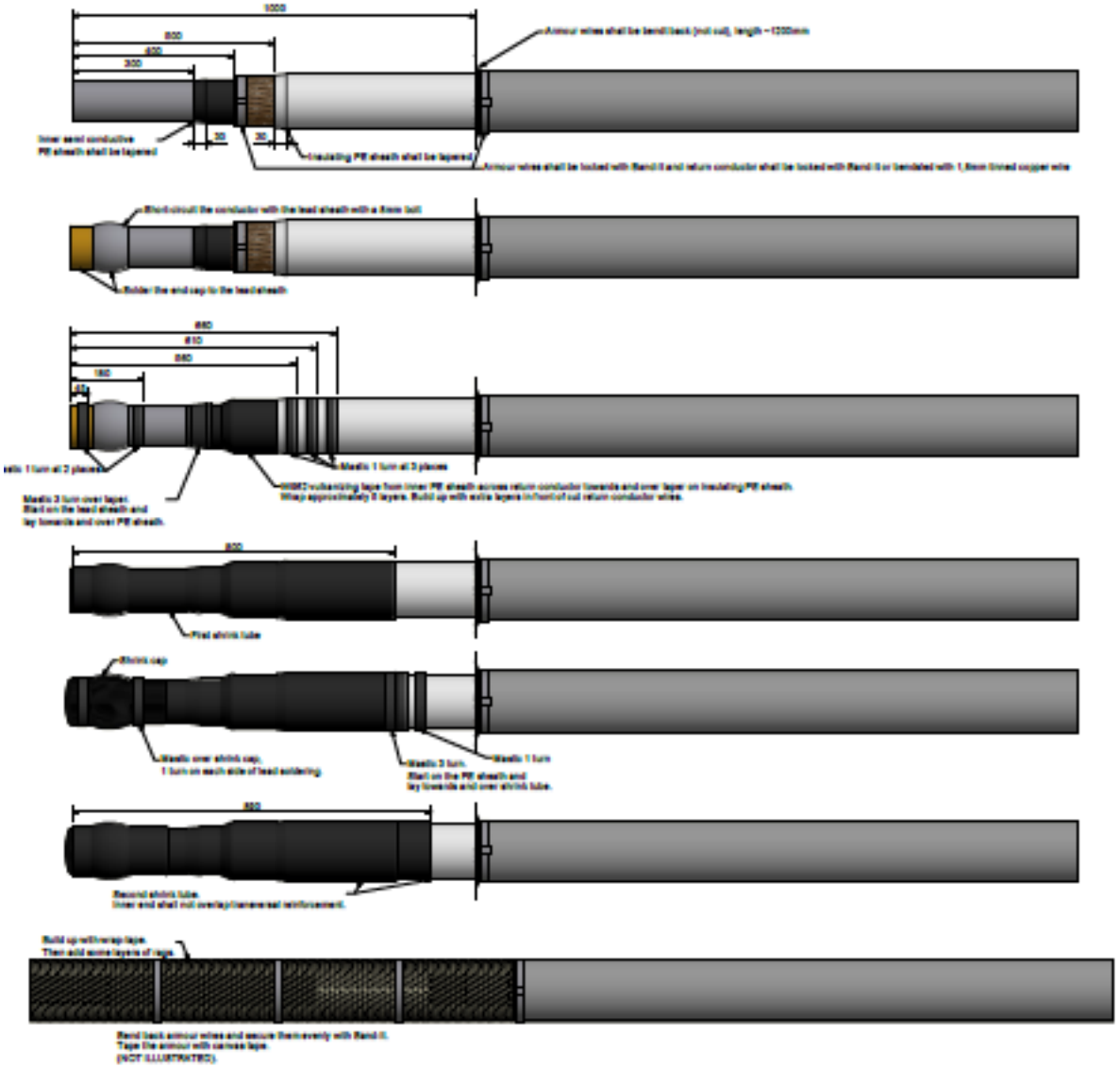
- Campaign 1 May 2017
  - Debury
  - Pin point fault on seabed
  - Cut cable to east of fault
  - Recover, cut back, test, seal and lay down western cable end
  - Recover eastern cable end including fault recovery into turntable
  - Cut, test, seal and lay down eastern cable end

Alongside Fredrikstad 1st May 2017

Recovery of cable to 30m WD, prepare for pull in on chute



1. Pause recovery at 30m WD
2. Deploy wire/ rope via A frame
3. Connect A frame winch to cable end choked sling for snagging control over chute



Two Staged Marine Repair Campaign

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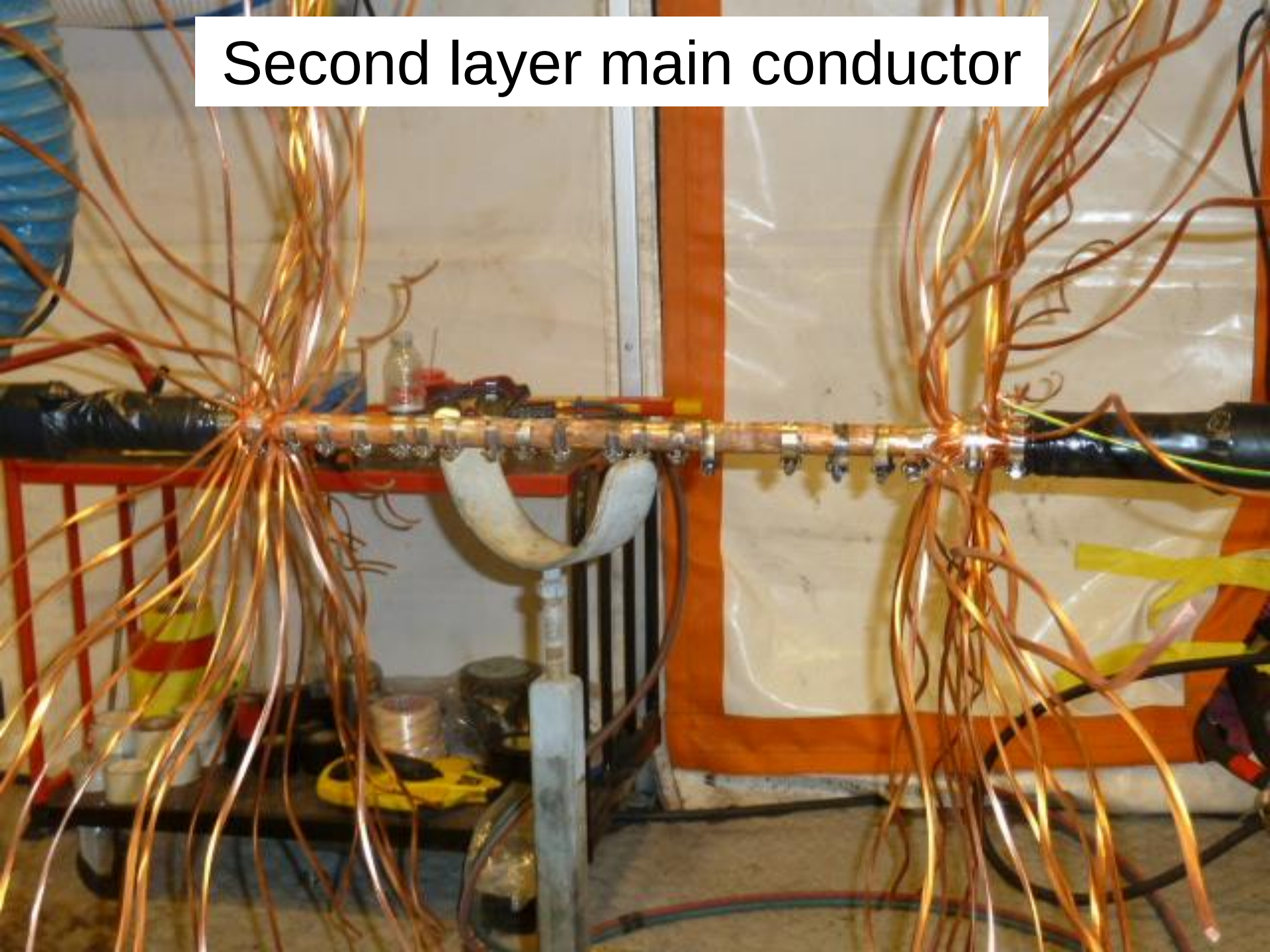
  - Cut, test, seal and lay down eastern cable end

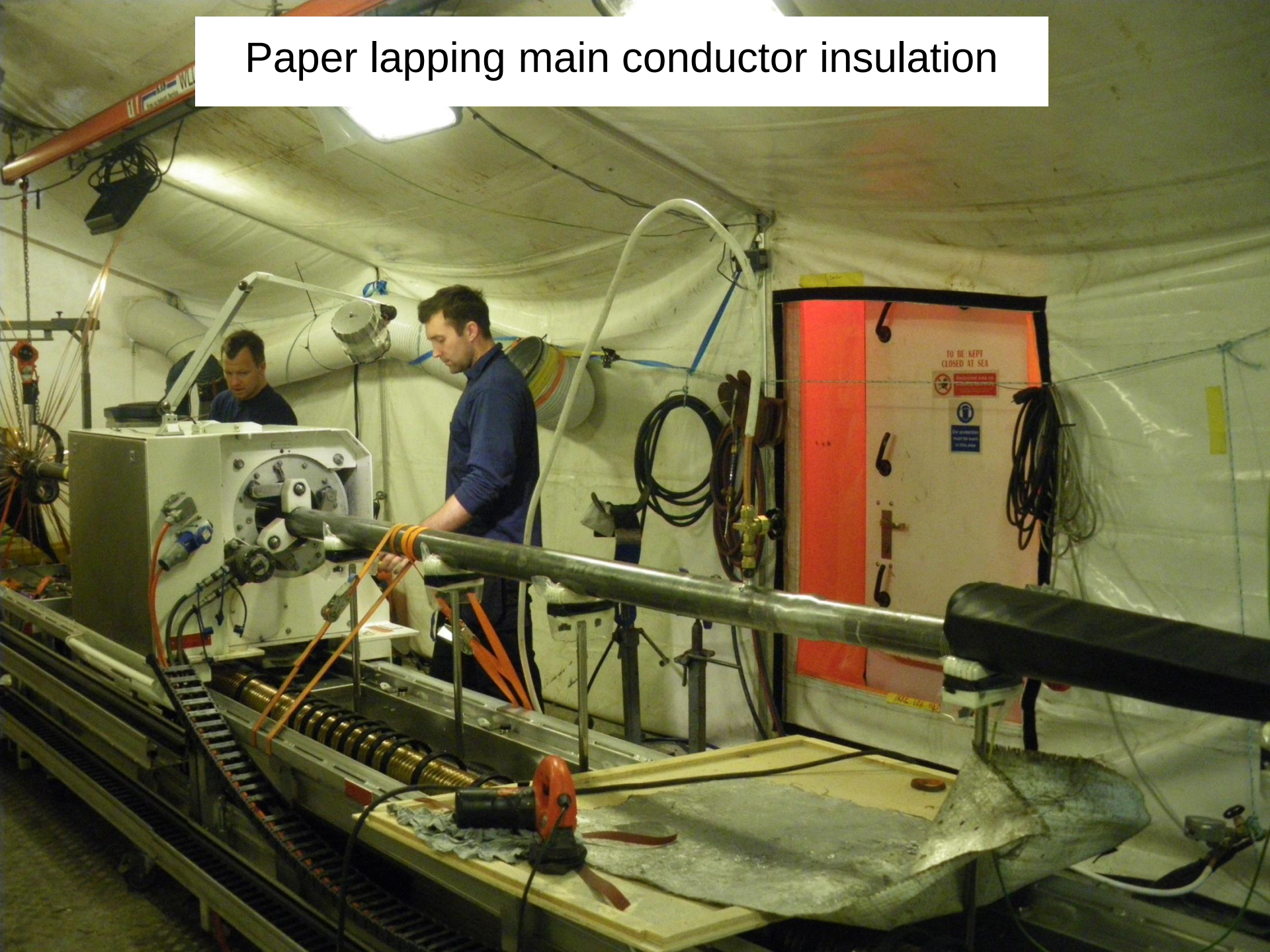
- Campaign 2 August-September 2017
  - Load out spare cable in Halden
  - Splice repair section
  - Trench inserted section


Silver soldering central strand

Second layer main conductor

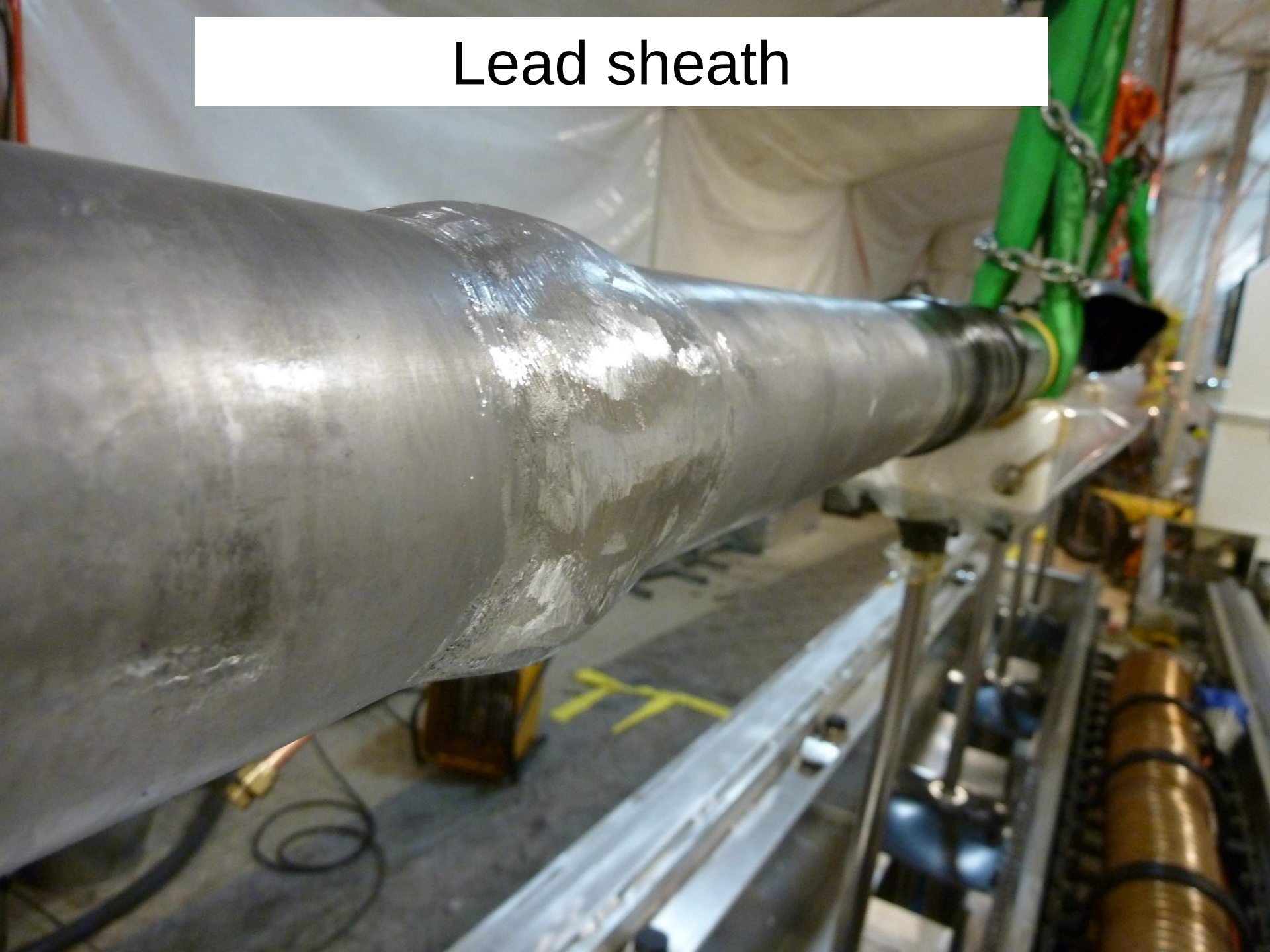


Paper lapping main conductor insulation

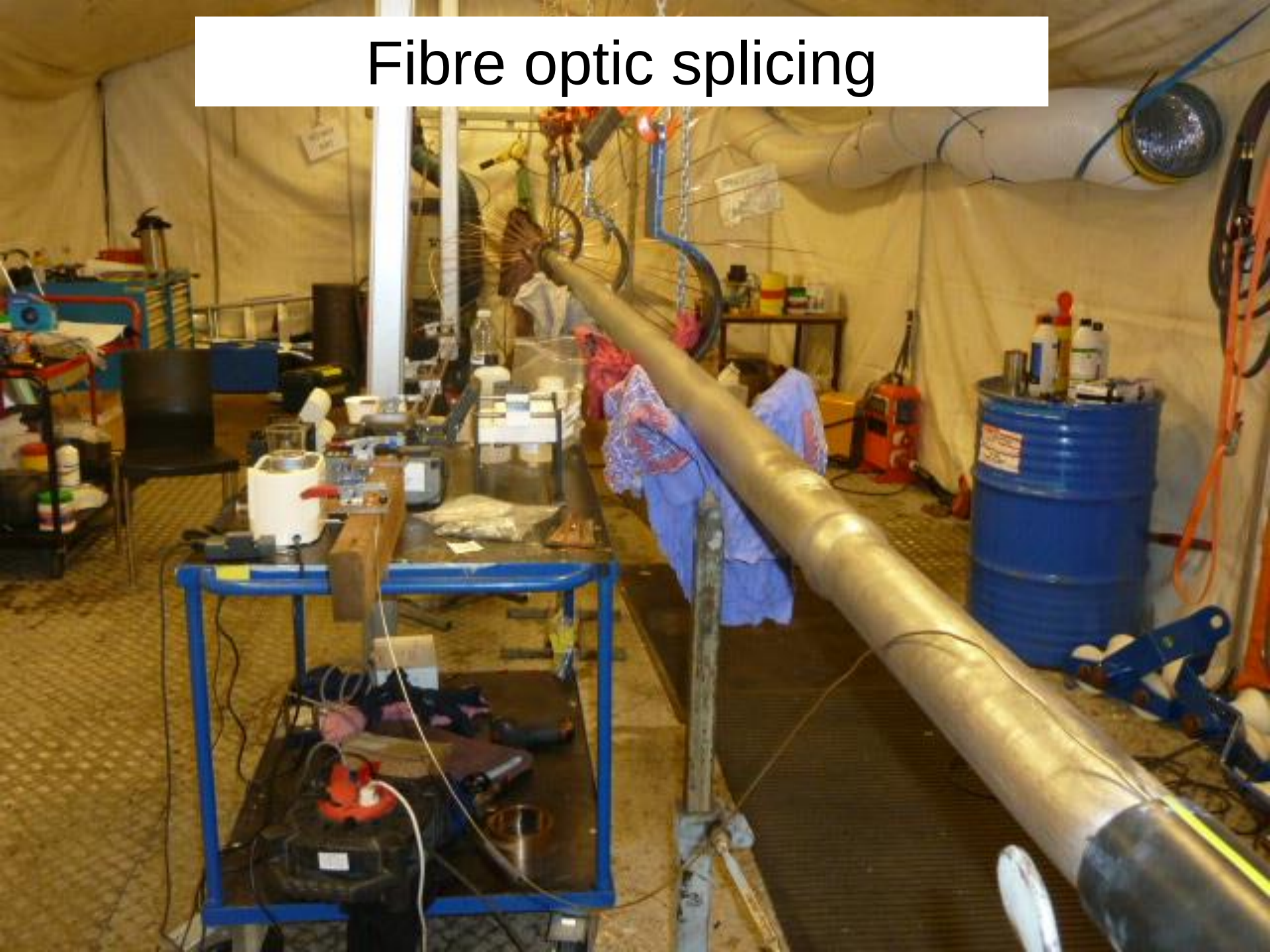


Oil impregnation of paper insulation

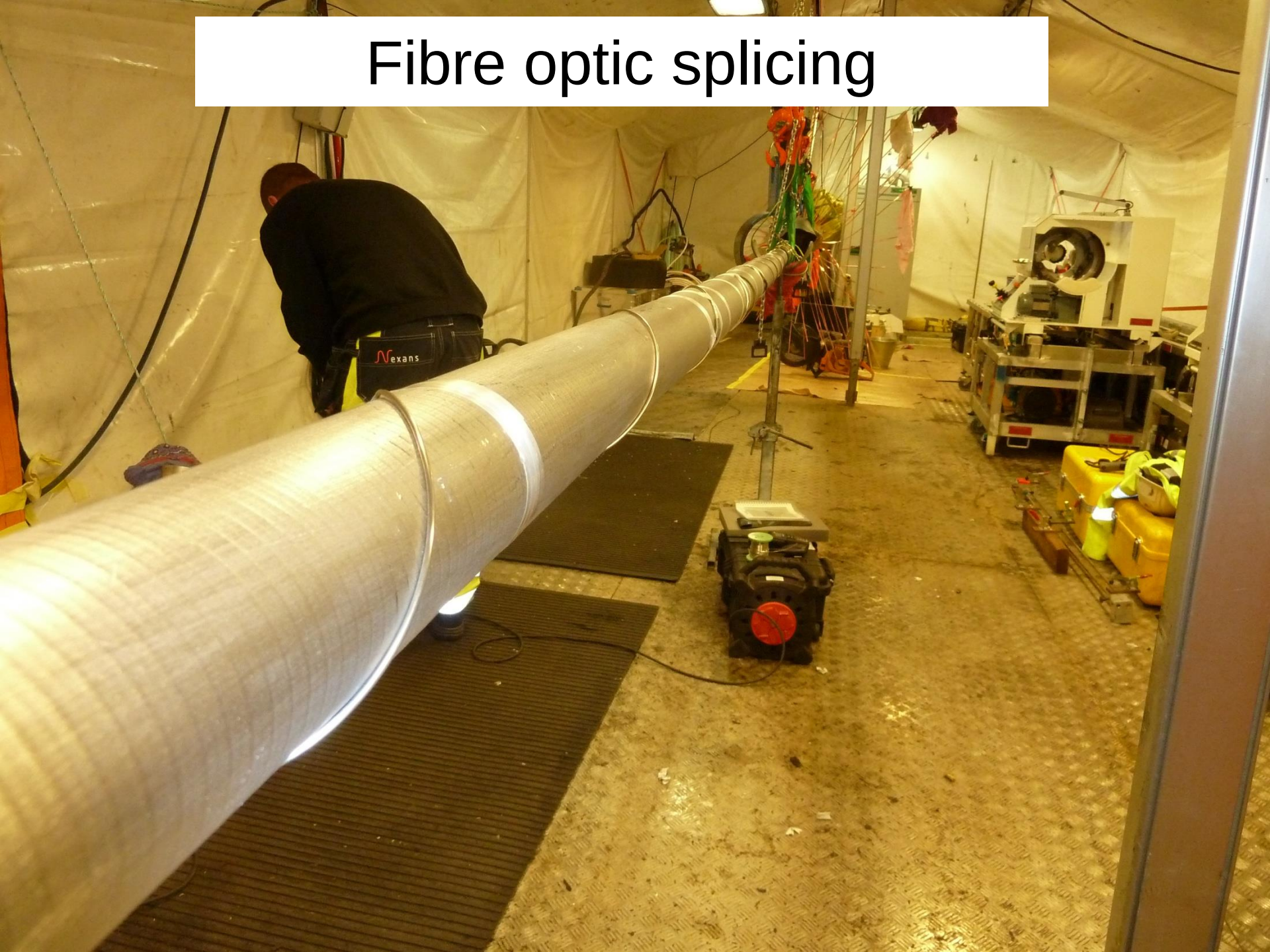
Lead sheath



Fibre optic splicing

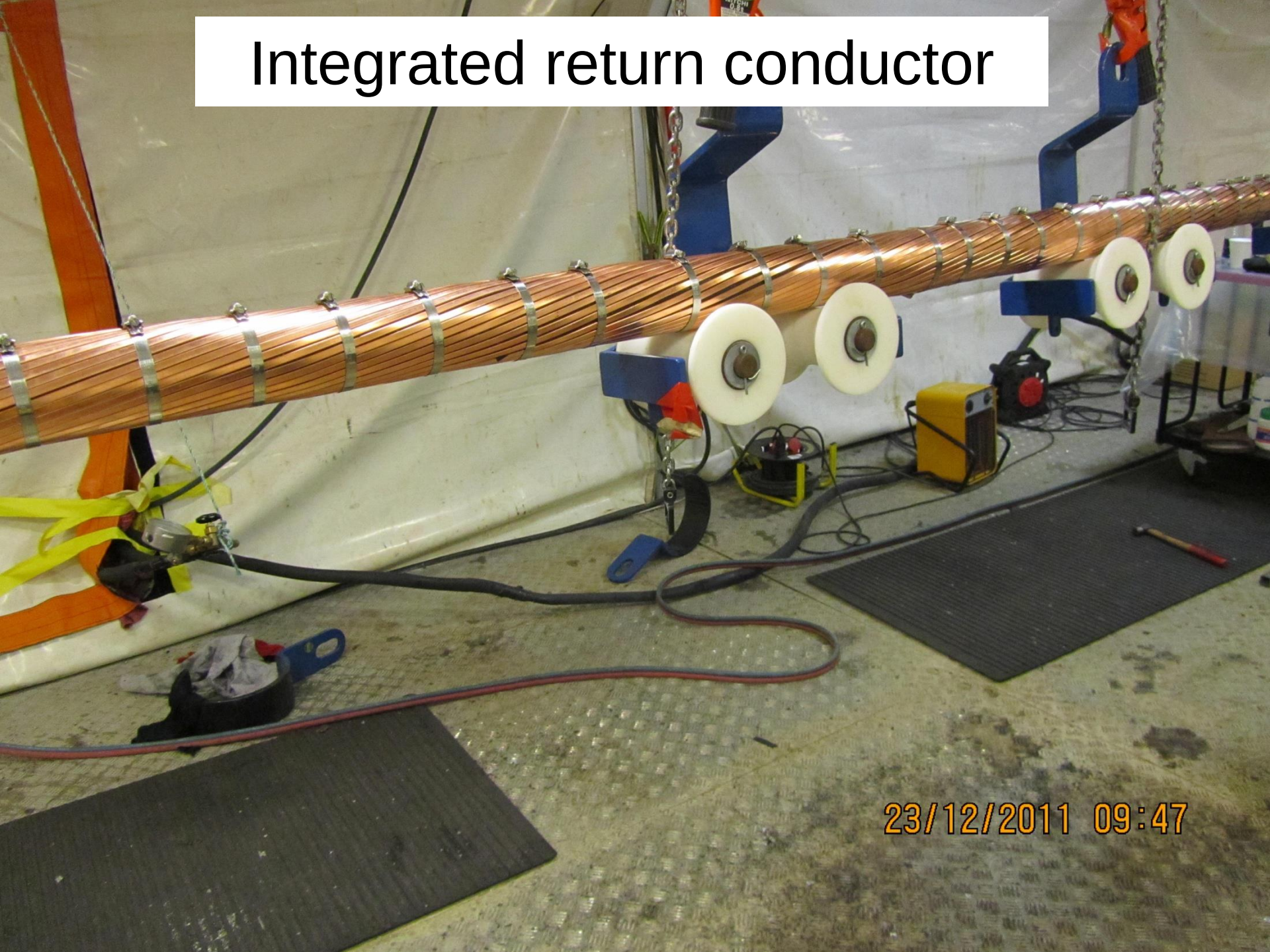


Fibre optic splicing

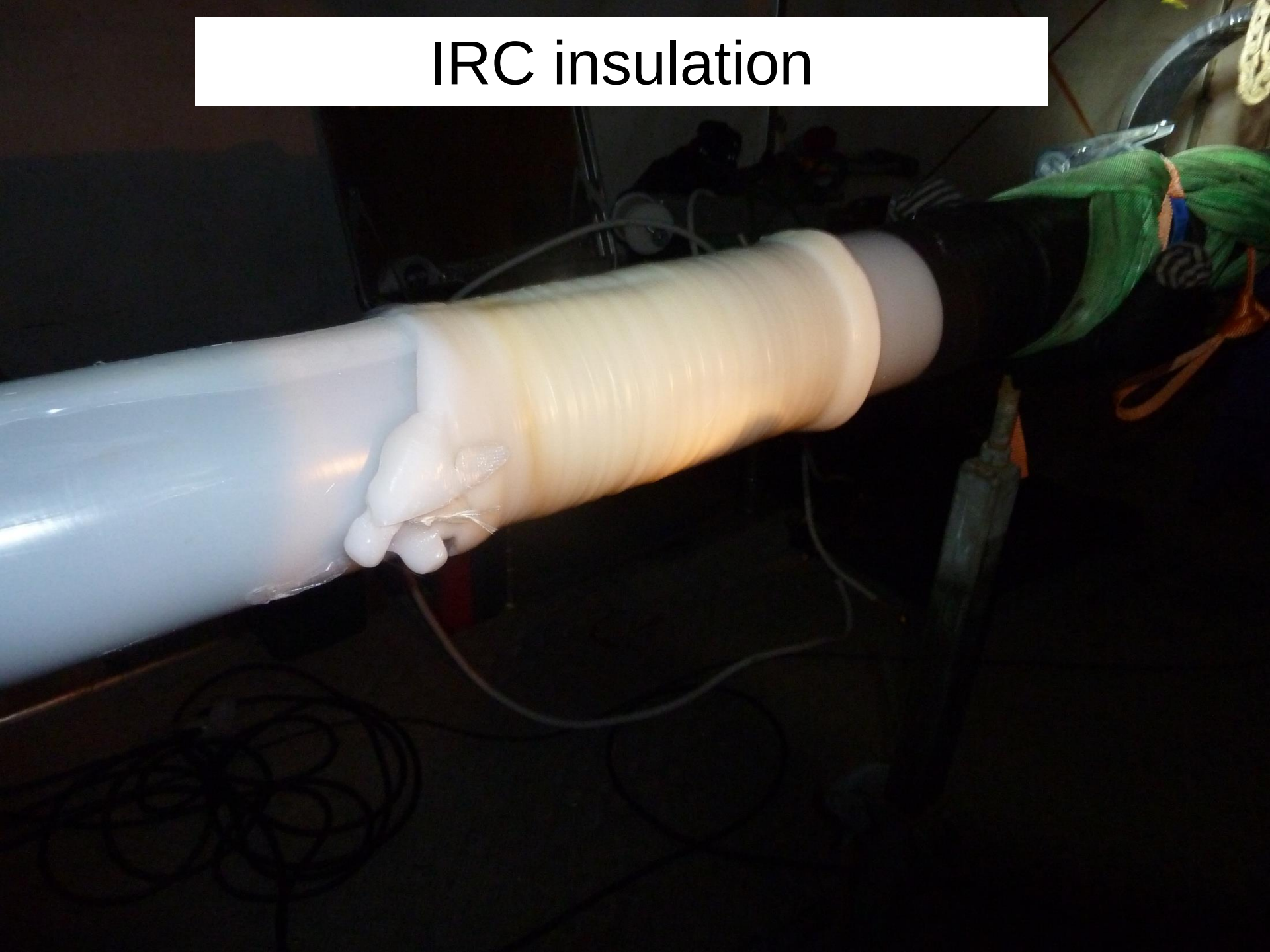


Stainless steel wrapping & taping

Integrated return conductor

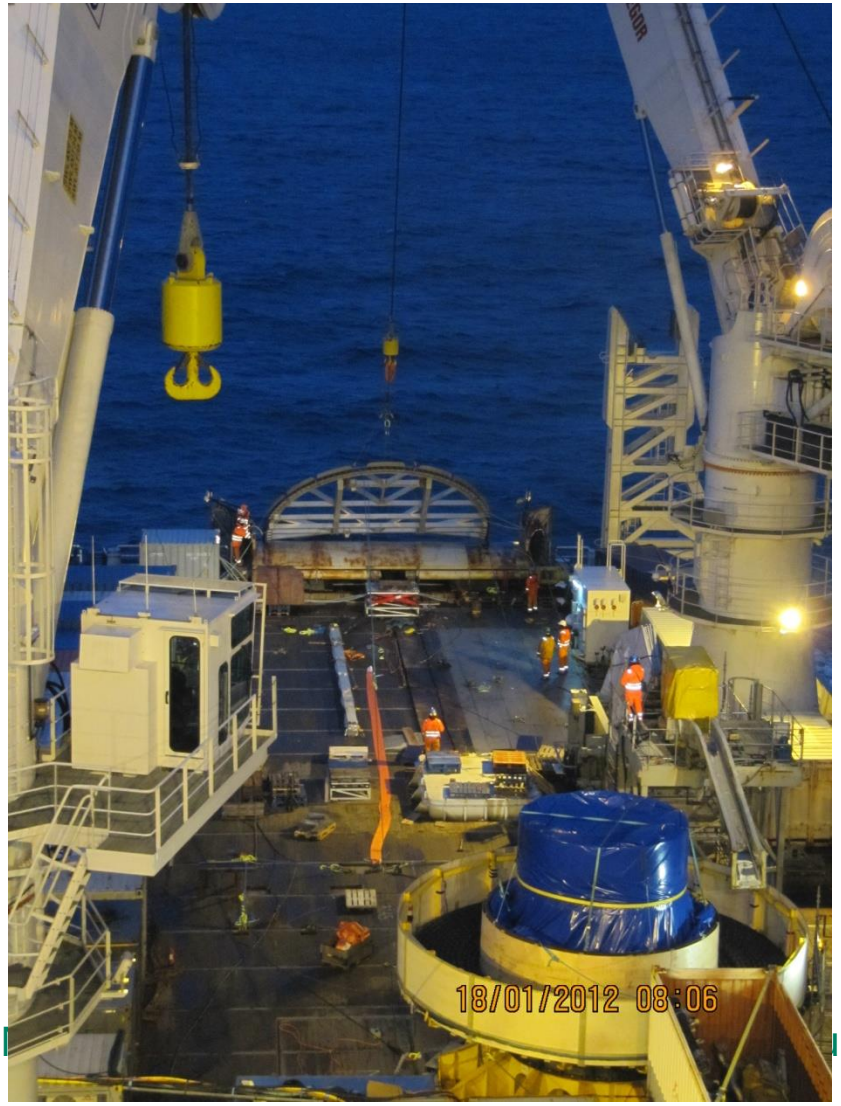


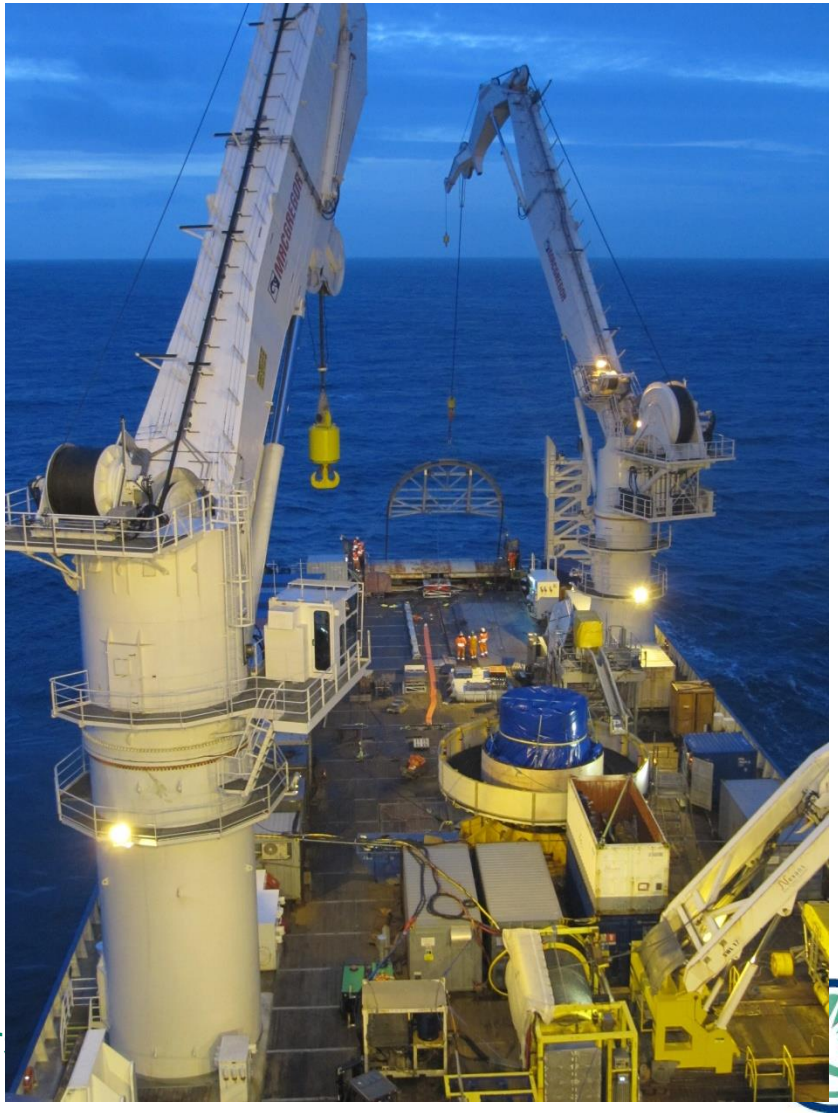
IRC insulation



Steel armour

Lay down of cable “bight”





ROV cutting cable ties on seabed

Recovery of cable “bight”

What we take into 2017/18

- Cables
  - Two campaign submarine cable repair
  - First end-to-end survey of all four cables now due in 2018
- Convertor stations
  - Integration of new cable system into control system
  - Control system replacement & obsolescence planning
- Changing commercial use of Moyle
  - Directions of flow – we now have two system operators keen to know that we are reliable
  - Value of ancillary services
  - Interconnected system – Moyle reacts to IFA incident
  - New SEM trading arrangements i-SEM due 2018
  - Maximising what headroom on SPT system will be made available through the capacity calculation
- General
  - New staff

Celtic Interconnector Update

Interconnector User Forum, 3rd May 2017

Eoghan Tuite, Senior Engineer

Co-financed by the European Union
Connecting Europe Facility

EIRGRID

“explore and develop opportunities to interconnect the transmission system with other systems”

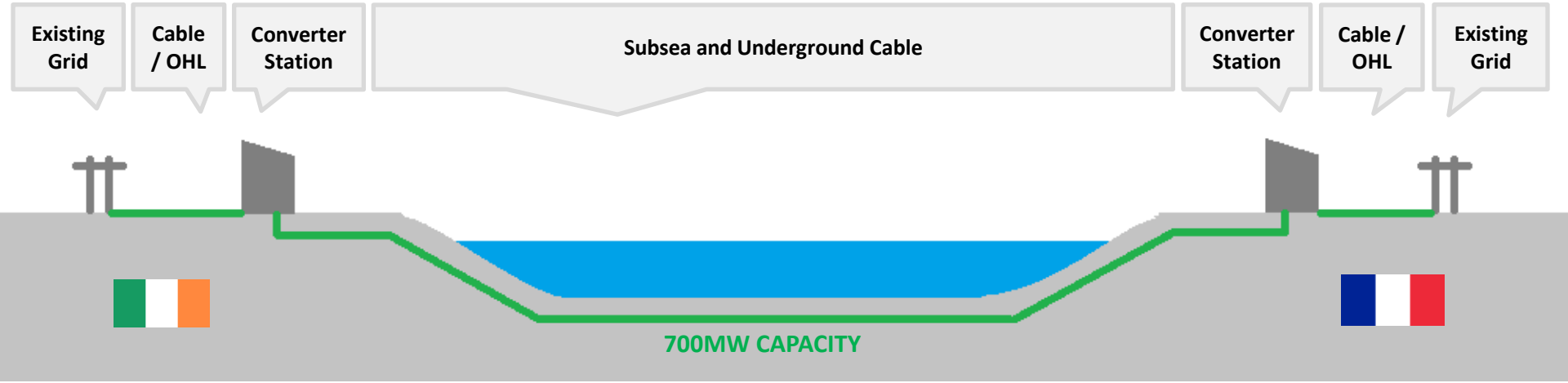
– TSO Licence

Le réseau
de transport
d'électricité

- Transmission system operator in France
- Responsible for operation, maintenance and development
- 105,000 km of power lines and 2,710 substations – Europe's largest system
- 8,500 employees
- Existing interconnection with Belgium, Great Britain, Italy, Spain, Switzerland
- Further interconnection in development, including Celtic

EIRGRID

Celtic Interconnector



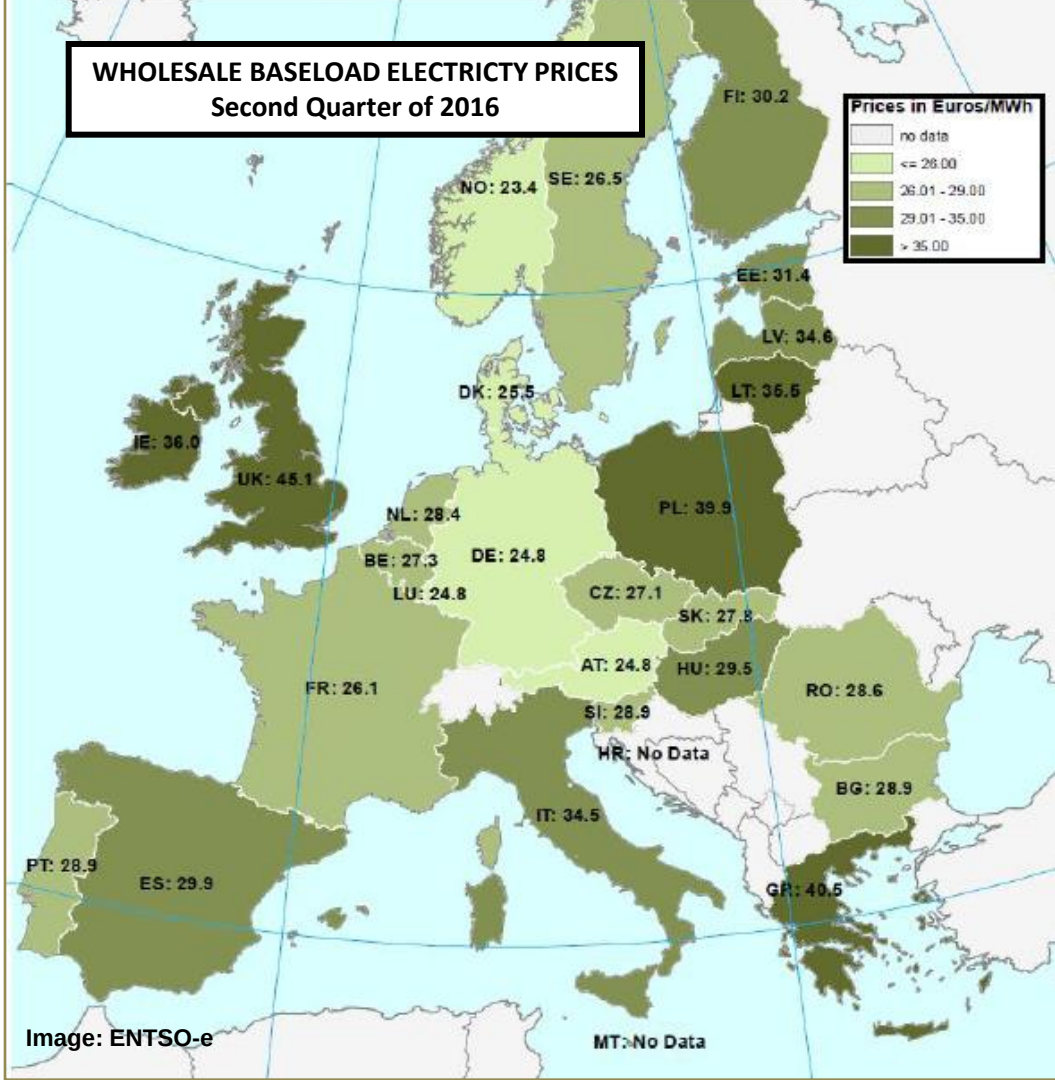
HVAC ELECTRICTY | HVDC ELECTRICITY | HVAC ELECTRICITY

EIRGRID

What are the benefits?

1. Competition

Increased electricity trading & downward pressure on electricity prices



2. Security of Supply

- Additional supply of power and increased diversification

3. Sustainable Energy

- facilitates further development of renewable sources

European Context

Project of Common Interest

European Commission

HIGHWAY 2050

Co-financed by the European Union

Connecting Europe Facility

- Received €3.86m for Feasibility Phase
- Secured €4m for current phase

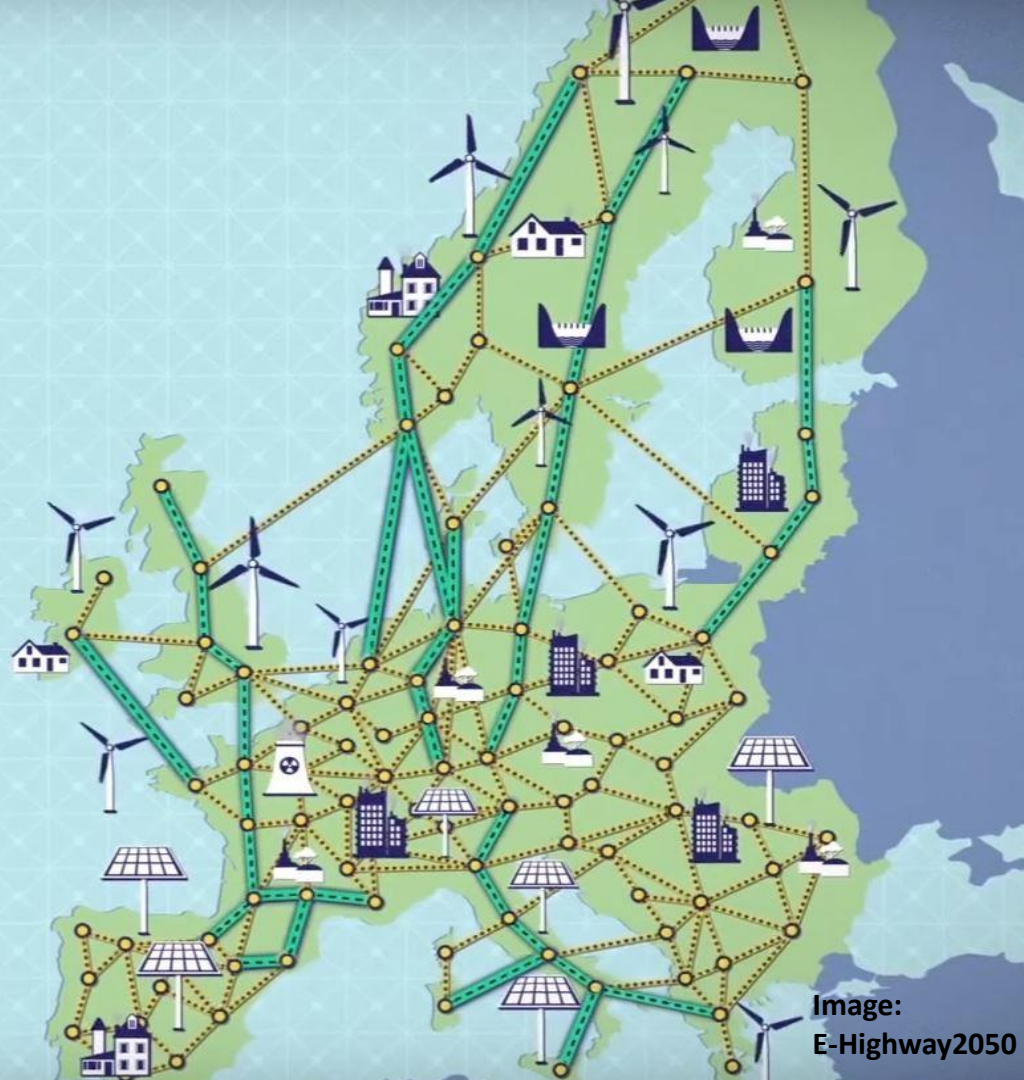


Image: E-Highway2050

Celtic Interconnector Marine Survey Vessels in Cork Harbour

MV Chartwell
- Irish Nearshore Geophysical

RRS Ernest Shackleton
- Offshore Geophysical
- Offshore Geotechnical

MV Proteus
- Irish Shallow Water Geophysical
- Irish Nearshore UXO

Bibby Tethra
- Irish/French Nearshore Geotechnical
- Offshore UXO

MV Lia
- French Nearshore Geophysical
- French Nearshore UXO

Legend

Name
- Great Island 220kV
- Knockraha 220kV
- La_Martyre_Substation

Landing Points
- Ballycroneen Beach
- Ballinwilling Strand
- Pontusval
- Moguériec

Celtic Interconnector Marine Survey Route

Median Line
UK 12 nm Limit
Ireland 12nm Limit

Rte Réseau de transport d'électricité
EIRGRID
Intertek Valued Quality. Delivered.

0 25 50 100 150 200 km


BIBBY
HYDROMAP
SURVEY
BIBBY TETHRA
LIVERPOOL
BIBBY TETHRA

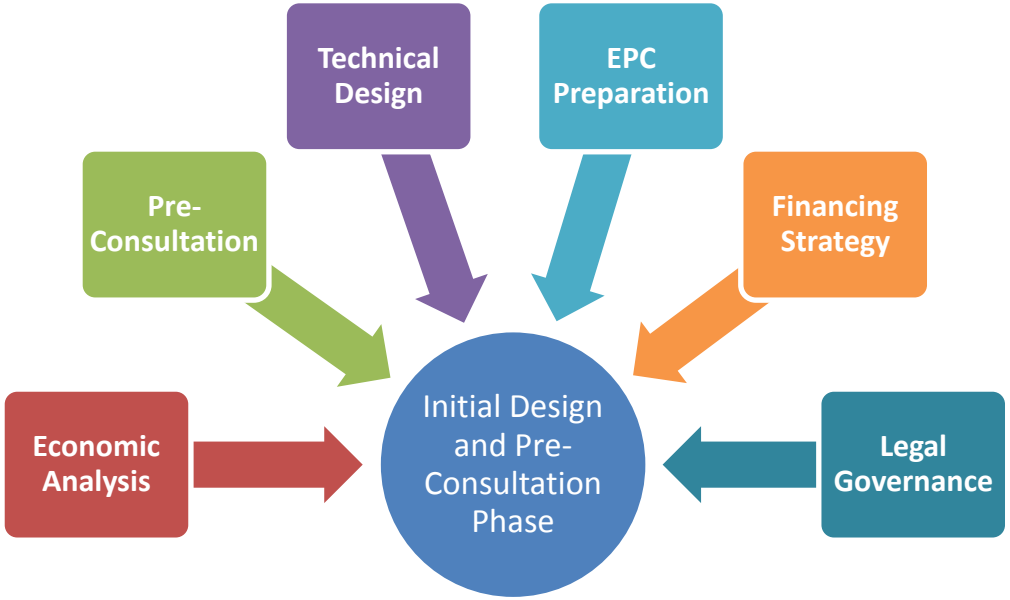
Successful Feasibility Phase

- Technical Assessment
  - Suite of marine surveys and marine engineering studies
  - Identification of feasible landfall, onshore converter station sites and circuit routes
  - Assessment of technical parameters and grid capacity
- Economic Assessment
  - Business case and costs benefit analysis
- Initial review of economics, permitting, legal, governance and regulatory aspects for project
- Project confirmed to be feasible upon conclusion of studies
- Approval granted to enter next phase of project

EIRGRID

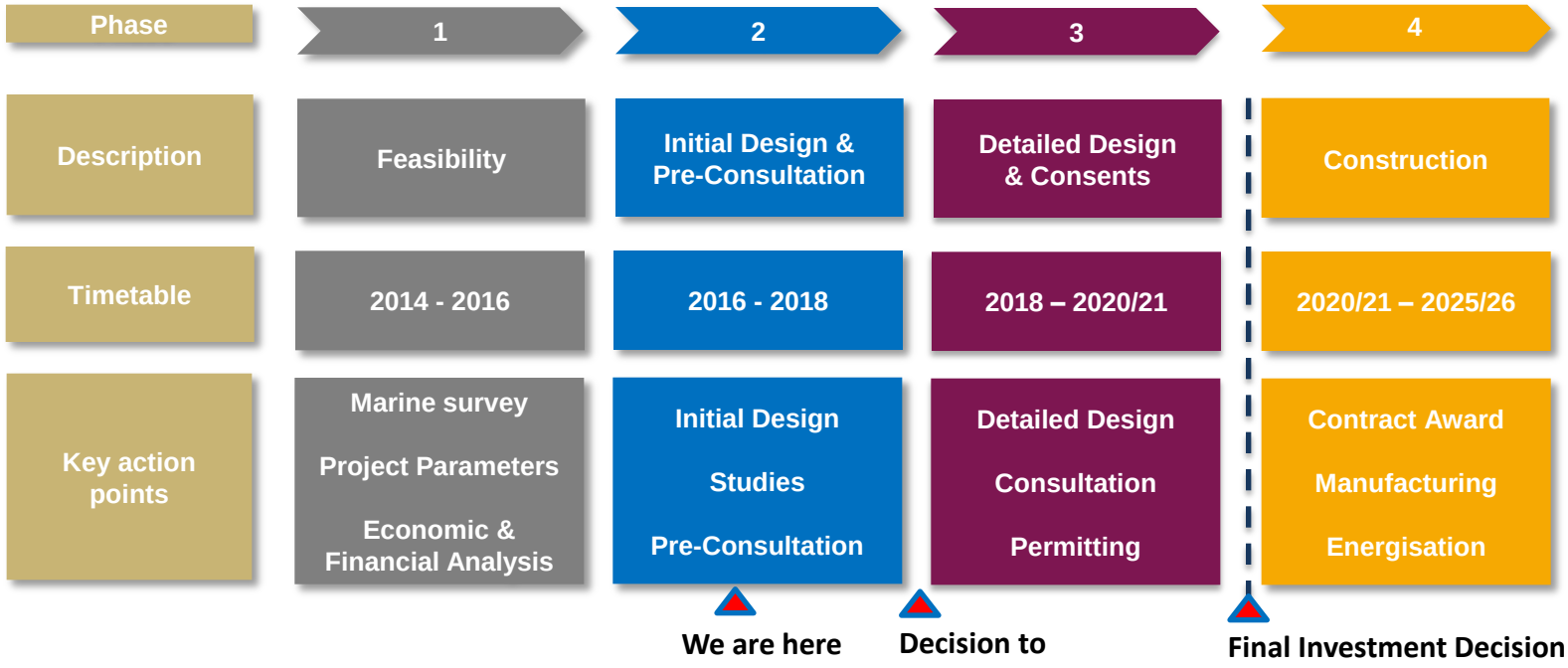
MoU Signing for IDPC Phase July 2016

Initial Design and Pre-Consultation Phase



EIRGRID

Project Roadmap



Summary

EirGrid & RTE

Feasible

Competition

Sustainability

Security of Supply

Initial Design & Pre-Consultation Phase

EIRGRID

Thank You

EIRGRID

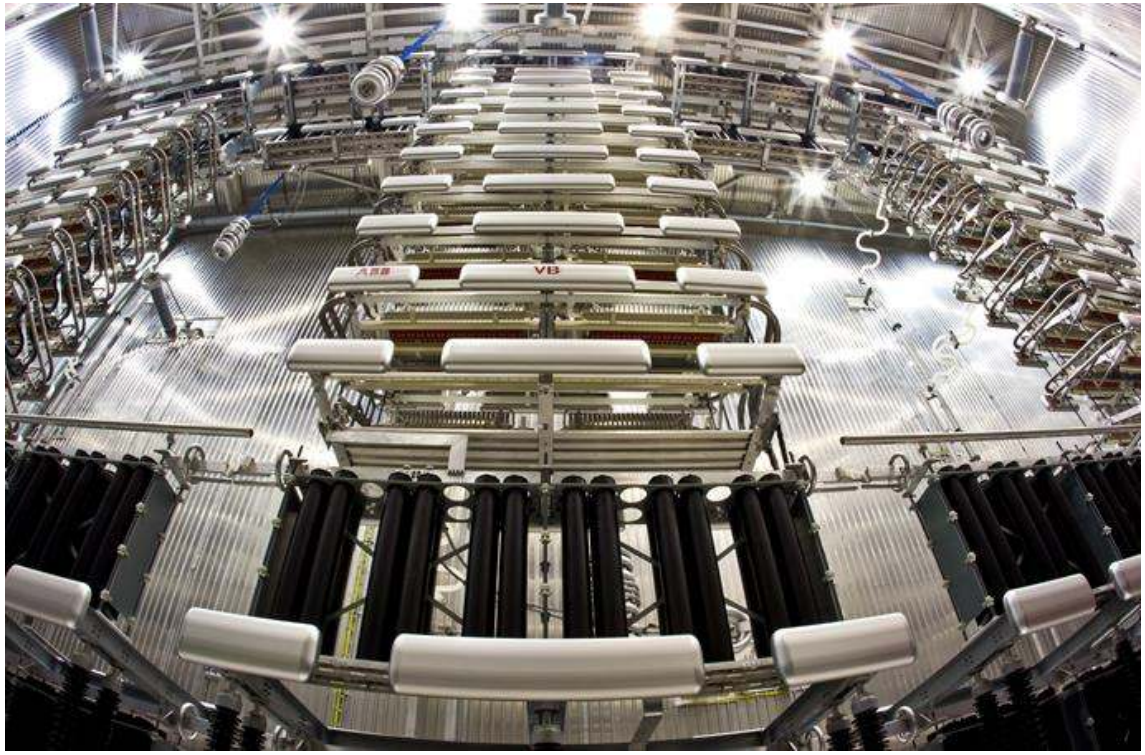
East-West Interconnector and Moyle Interconnector User Forum 2017

EWIC – Asset Management

Aidan Corcoran

EIRGRID
East West Interconnector

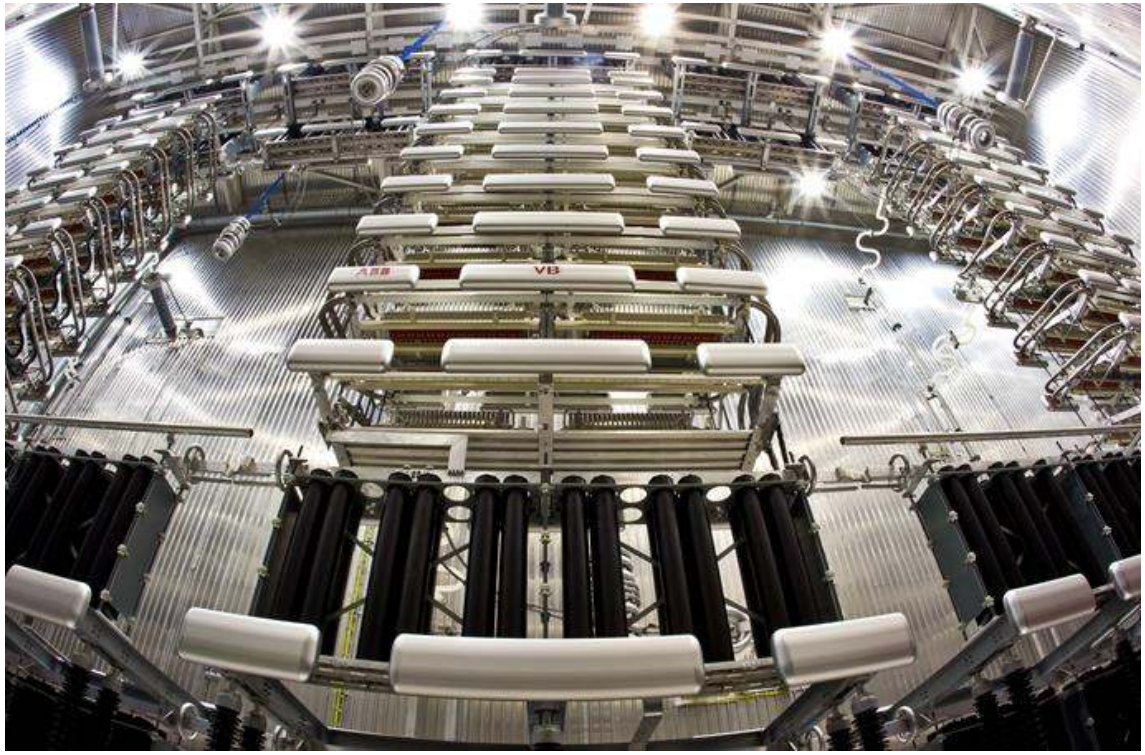
EWIC – Year in review



- No Lost Time Accidents of Injuries
- Achieved ISO 55001 Accreditation for ‘best practice’ Asset Management
- 93% Availability (2015/16)
- Contracts Awarded for New Connection into Connah's Quay
- Major Repair (Sep-Dec 2016)

EIRGRID
East West Interconnector

EWIC Availability



- 2015/16
  - Availability 93.0%
  - 2 Forced Outages 6%
  - 1 Scheduled Outage 1%
- 2016/17 to date
  - 51% (Major Fault)
  - 2 Forced Outage
  - 1 Scheduled Outage

EIRGRID
East West
Interconnector

Major Fault

- EWIC suffered a major fault at the Portan Converter Station in September 2016
- The repair works involved replacing and testing main circuit components
- The repair works were completed 2 months ahead of schedule on the 23rd December

EIRGRID
East West Interconnector

New Connection Works

- On the 18th April, EWIC was switched out to facilitate the New Connection Works into Connah's Quay
- The works and associated tests are scheduled for completion by the 31st May

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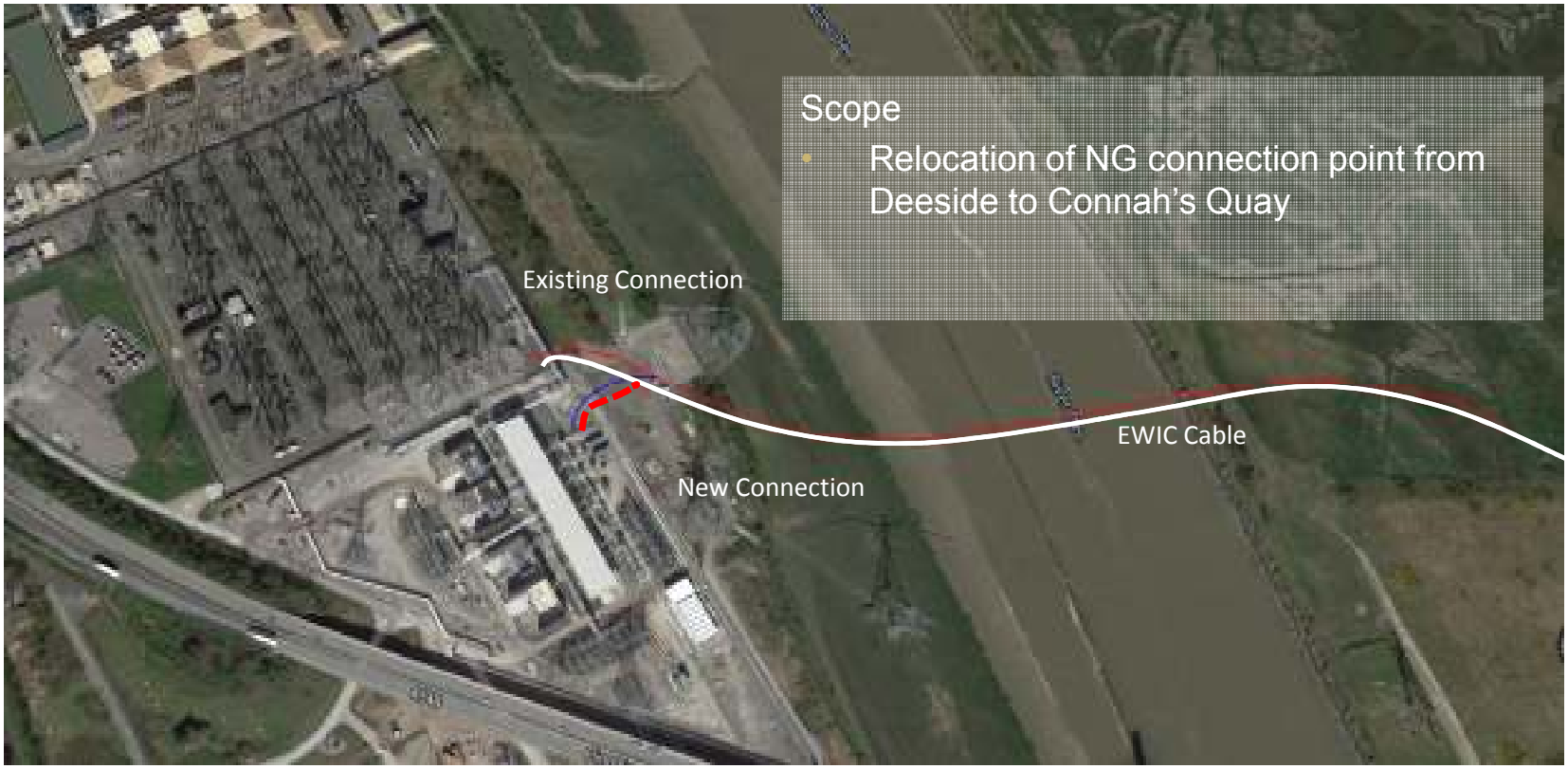
East West Interconnector

New Connection Works



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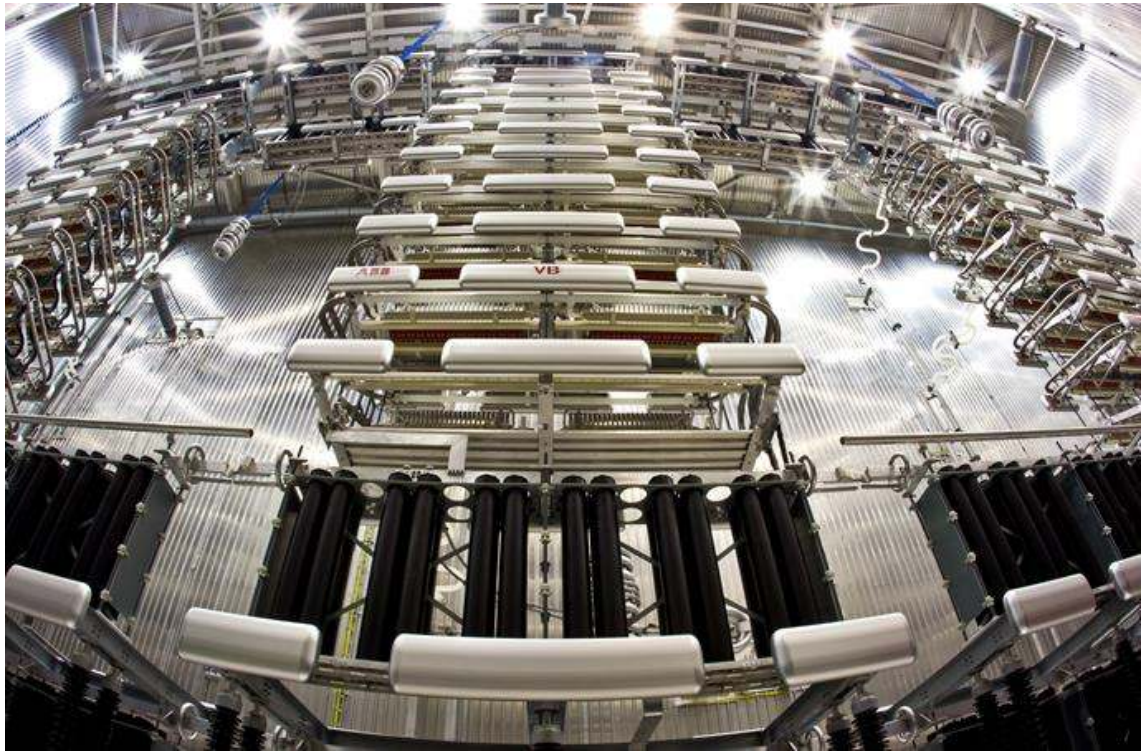
East West Interconnector

Looking Forward



- Re-energise EWIC into the New Connection Point
- Award Contracts for the New IT Systems to be installed on EWIC in 2018 during annual outage
- Planning a Marine Survey during the 2018 weather window
- Implement new GIS based cable asset management system

EIRGRID
East West Interconnector

I-SEM Interconnectors Project

East West Interconnector and Moyle Interconnector User Forum

3rd May 2017

Project Activity Overview

Item	2017												2018					
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
HAR, annex, SAP, RD-LTTR				Submission						Approval								
Annual Interconnector Forum																		
Trial / Training / Testing				Plan Published				Initial test					Main					
Year Ahead Interconnector Capacity										Publication								
FTR trading information update										Publication								
FTR Auction – Live on JAO & Auctions																		
Interim cross-zonal arrangements					Approval													
SEM-GB Day Ahead				Framework Agreement		Approval						MRC Approval						
SEM-GB Intraday				Framework Agreement		Approval						Testing complete						
I-SEM Market Trial / FTR information																		

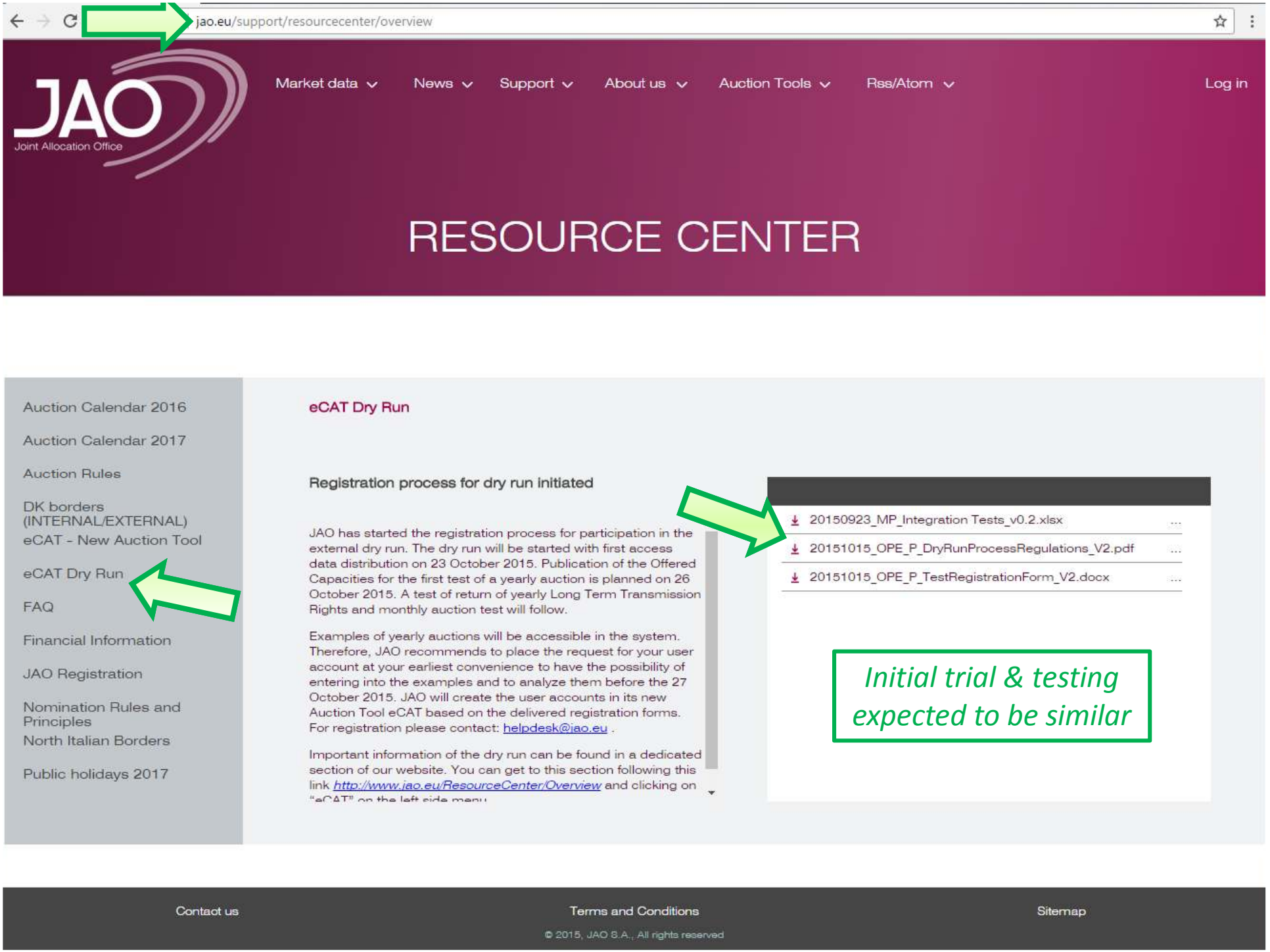
Key: RA; ICO; TSO

Test, Trial, Training

- #191 (19.5.17) Trial & Participant Test Plan
  - Outline of tests
- #192 (7.17-9.17) Initial Trial & Participant Test
  - One week, approx. end August
- #196 (1.18-2.18) Trial, Training, & Participant Test
  - Aiming for two one week periods, mix of scenarios
  - Training in Dec. 2017 based on survey in Oct. 2017

#192 (7.17-9.17)
Initial Trial & Participant Test

- Enrolment
  - Name*, email*, EIC code, digital cert, contact details
- Similar to JAO's eCAT Dry Run scenarios:
  1. Registration and Connectivity
  2. Yearly Auction
  3. Monthly Auction
  4. Monthly Auction with reduction periods & returns
  5. Monthly Auction with reduction periods & cancellation
- Feedback request:
  - Any use of computer to computer interfaces planned?
  - Other comments?


jao.eu/support/resourcecenter/overview
JAO
Joint Allocation Office
Market data
News
Support
About us
Auction Tools
Rss/Atom
Log in
RESOURCE CENTER
Auction Calendar 2016
Auction Calendar 2017
Auction Rules
DK borders (INTERNAL/EXTERNAL)
eCAT - New Auction Tool
eCAT Dry Run
FAQ
Financial Information
JAO Registration
Nomination Rules and Principles
North Italian Borders
Public holidays 2017
eCAT Dry Run
Registration process for dry run initiated
JAO has started the registration process for participation in the external dry run. The dry run will be started with first access data distribution on 23 October 2015. Publication of the Offered Capacities for the first test of a yearly auction is planned on 26 October 2015. A test of return of yearly Long Term Transmission Rights and monthly auction test will follow.
Examples of yearly auctions will be accessible in the system. Therefore, JAO recommends to place the request for your user account at your earliest convenience to have the possibility of entering into the examples and to analyze them before the 27 October 2015. JAO will create the user accounts in its new Auction Tool eCAT based on the delivered registration forms. For registration please contact: helpdesk@jao.eu .
Important information of the dry run can be found in a dedicated section of our website. You can get to this section following this link http://www.jao.eu/ResourceCenter/Overview and clicking on
20150923_MP_Integration Tests_v0.2.xlsx
20151015_OPE_P_DryRunProcessRegulations_V2.pdf
20151015_OPE_P_TestRegistrationForm_V2.docx
Initial trial & testing expected to be similar
Contact us
Terms and Conditions
Sitemap
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RA Approvals

- #214 (31.7.17) Interim cross zonal arrangements
  - Interim Coordinated Capacity Calculation
  - Losses
  - Counterparty Trading
  - Ramping and Balance Responsibility
- #51 (17.10.17) HAR and Access Rules Approval
  - Harmonised Allocation Rules & SEM-GB Annex
  - Regional design of long term transmission rights
  - Access Rules, incl. go-live contingency
  - Single Allocation Platform

#195 (27.10.17)
Trading Information Update

- Confirmation on applicable rules
- Capacity Available
  - Interim Coordinated Capacity Calculation
- Market Spread Calculation (HAR annex)
  - Losses
- Auction Calendar
- Outputs during Market Trial
  - e.g. Loss adjusted market spread publication

FTR market go-live

- #199 (1.3.18) EWIC & Moyle live on JAO platform
  - Auction Calendar set-up
  - Ability to enter default bids

- #52 (3.18-5.18) FTR Auctions commence
  - Go-live decision

Participant Interactions

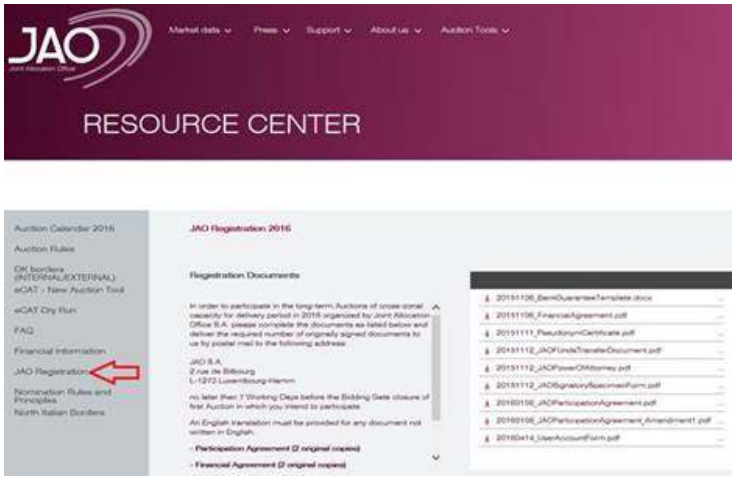
- ICOs attending PMG meetings
  - January: Feedback on FTR auction date
  - March: Update on registration
- Query management
  - Direct and via I-SEM
- Update at the annual interconnector forum
  - Option of bilateral sessions

Participant Interactions 2017

- May: Trial and Participant Test Plan published
- June: Consultation on Access Rules
  - Contingency details part of submission in July
- Initial Trial/Testing
  - July: Enrolment
  - Aug: Initial Trial/Testing
- Sept: Registration update
- Oct: Trading Information Update & Training Survey
- Dec: Training delivery

FTR Market Contacts

http://jao.eu/support/resourcecenter/overview



JAO: helpdesk@jao.eu

Moyle: paul.mcguckin@mutual-energy.com

EWIC: EastWestInterconnector@Eirgrid.com

Project: michael.carrington@eirgrid.com

TRANSITION AND CONTINGENCY

FTR Auction Dates

Considerations

- Participant feedback
- Availability of supporting systems
- Credit requirements for participants
- ICO commercial decisions
- Readiness evidence
  - E.g. Go-live of day-ahead

Current product mix

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
SEM Annual	Auctioned up to 3 months ahead											
Calendar Annual				Auctioned up to 3 months ahead								
Seasonal	Auctioned c.6 weeks ahead											
Quarterly	Auctioned c.5 weeks ahead											
Monthly	Auctioned in preceding month											

Transition

- FTR Window: 15th March to 15th May
  - Monthly (June); Q3 + monthly
- Current
  - PTRs solution up to May 21st for delivery May 22nd
  - Contracts with ICOs; AMP & SEM systems
- New
  - FTRs for delivery from 1st June
  - Contracts/systems with JAO

Potential go-live Calendar options by date

Direction	Product Type	Product Name	Auction Timing	Est. MW*
GB >> IE	Monthly	Monthly 1 - June	May, week 2	150
GB >> IE	Monthly	Monthly 2 - June	May, week 3	150
GB >> IE	Quarterly	Quarterly 1 (Jul-Sept)	May, week 3	100
GB >> IE	Monthly	Monthly 3 - June	May, week 4	200
GB >> IE	Quarterly	Quarterly 2 (Jul-Sept)	May, week 4	100
GB >> IE	Monthly	Monthly 1 - July	June, week 1	100
GB >> IE	Monthly	Monthly 2 - July	June, week 2	100
GB >> IE	Monthly	Monthly 3 - July	June, week 3	100
GB >> IE	Monthly	Monthly 1 - August	July, week 1	100
GB >> IE	Annual	SEM Annual (Oct-Sept)	July	50
GB >> IE	Monthly	Monthly 2 - August	July, week 2	100
GB >> IE	Monthly	Monthly 3 - August	July, week 3	100
GB >> IE	Monthly	Monthly 1 - September	August, week 1	100
GB >> IE	Annual	SEM Annual (Oct-Sept)	August	50
GB >> IE	Seasonal	Seasonal (Oct-Mar)	August, week 2	75
GB >> IE	Monthly	Monthly 2 - September	August, week 2	100
GB >> IE	Monthly	Monthly 3 - September	August, week 3	100
GB >> IE	Quarterly	Quarterly 1 (Oct-Dec)	August, week 3	75
GB >> IE	Quarterly	Quarterly 2 (Oct-Dec)	August, week 4	75
GB >> IE	*Monthly*	*Standard for October onwarc*	*Starting Sept., week1*	
GB >> IE	Annual	Calendar Annual (Jan-Dec)	October	50
GB >> IE	Annual	Calendar Annual (Jan-Dec)	November	50
GB >> IE	Quarterly	Quarterly (Jan-Mar)	November, week 4	50

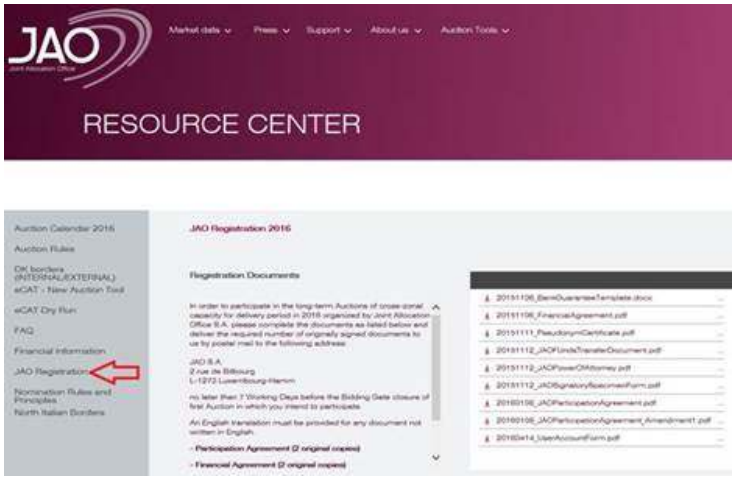
Direction	Product Type	Product Name	Auction Timing	Est. MW*
GB >> IE	Monthly	Monthly 1 - June	March	100
GB >> IE	Monthly	Monthly 2 - June	April	100
GB >> IE	Quarterly	Quarterly 1 (Jul-Sept)	April	100
GB >> IE	Monthly	Monthly 3 - June	April	100
GB >> IE	Monthly	Monthly 4 - June	May	100
GB >> IE	Monthly	Monthly 5 - June	May	100
GB >> IE	Quarterly	Quarterly 2 (Jul-Sept)	May, week 4	100
GB >> IE	Monthly	Monthly 1 - July	June, week 1	100
GB >> IE	Monthly	Monthly 2 - July	June, week 2	100
GB >> IE	Monthly	Monthly 3 - July	June, week 3	100
GB >> IE	Monthly	Monthly 1 - August	July, week 1	100
GB >> IE	Annual	SEM Annual (Oct-Sept)	July	50
GB >> IE	Monthly	Monthly 2 - August	July, week 2	100
GB >> IE	Monthly	Monthly 3 - August	July, week 3	100
GB >> IE	Monthly	Monthly 1 - September	August, week 1	100
GB >> IE	Annual	SEM Annual (Oct-Sept)	August	50
GB >> IE	Seasonal	Seasonal (Oct-Mar)	August, week 2	75
GB >> IE	Monthly	Monthly 2 - September	August, week 2	100
GB >> IE	Monthly	Monthly 3 - September	August, week 3	100
GB >> IE	Quarterly	Quarterly 1 (Oct-Dec)	August, week 3	75
GB >> IE	Quarterly	Quarterly 2 (Oct-Dec)	August, week 4	75
GB >> IE	*Monthly*	*Standard for October onwarc*	*Starting Sept., week1*	
GB >> IE	Annual	Calendar Annual (Jan-Dec)	October	50
GB >> IE	Annual	Calendar Annual (Jan-Dec)	November	50
GB >> IE	Quarterly	Quarterly (Jan-Mar)	November, week 4	50

Contingency

- FTR Go-live decision based on
  1. Rules in place with sufficient notice
  2. Successful FTR trial/training/testing
  3. *Central Systems Testing complete*
  4. *No red flags from market trial or other impacts*
  5. Background operational processes etc. in place
- Contingency re: I-SEM go-live
  - Continue to allocate PTRs using AMP
  - Compensate FTRs at auction price

FTR Market Contacts

http://jao.eu/support/resourcecenter/overview



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