Working Group Balancing

Monday 10th September 2018

Agenda

1. Approval of the MoM of previous WG Balancing
2. LFC Block Agreement – feedback consultation
3. Dossier Volume
4. Storm Risk
5. Daily auctions for FCR cooperation
6. aFRR/FCR procurement future evolution
7. AOB
    - aFRR new design
    - new MVAR design
    - publication design note R3 Down
    - Implementation of ToE w.r.t. R3 2018
    - EBGL implementation

1. Approval of the MoM of previous WG Balancing

Received comments

- **Febeliec** proposed textual improvements to the MoM
  - ➢ The MoM were amended accordingly
- **Teamwise** proposes a clarification to the question whether assets PGM C and PGM D need to bid in individually and what the requirements are for PGM B units.
  - ➢ The MoM are clarified and amended accordingly:

    "All assets with an individual power schedule (whether obliged or voluntary) need to bid in individually to the balancing market. All assets C and D must send an individual power schedule and hence bid in individually in the balancing market. PGM B units can choose to send an ON/OFF schedule or a power schedule. ON/OFF schedules can be combined with portfolio bidding for balancing. PGM B units who voluntarily choose to have a power schedule need to bid in individually in the balancing market."

2. LFC - Block Agreement

3. Dossier Volume

by Kristof de Vos

LFC - Block Agreement and Dossier Volume

Link towards presentation:

4. Offshore integration

Agenda

1. Context
2. Storm forecast tool – key requirements
3. Standard procedure
4. Fall back procedure
5. Next steps

Context

Context – storm risk in North Sea

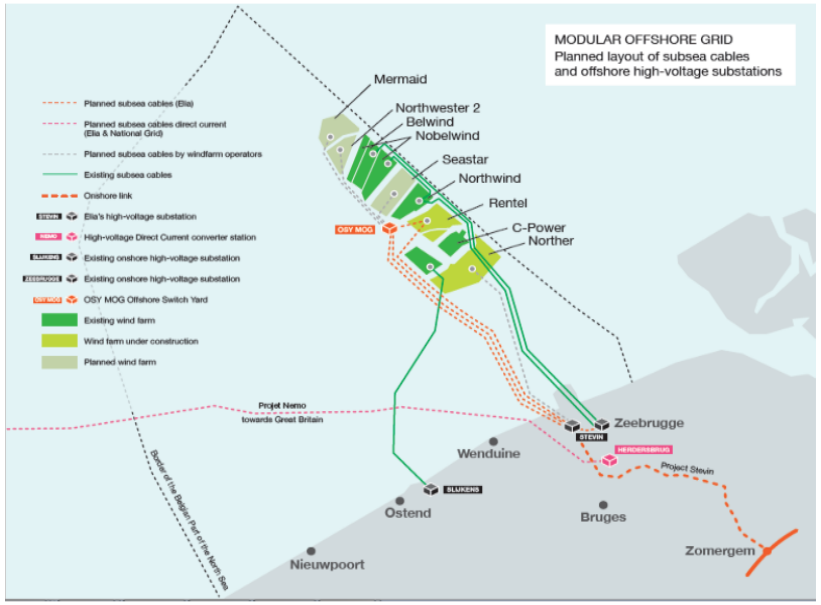
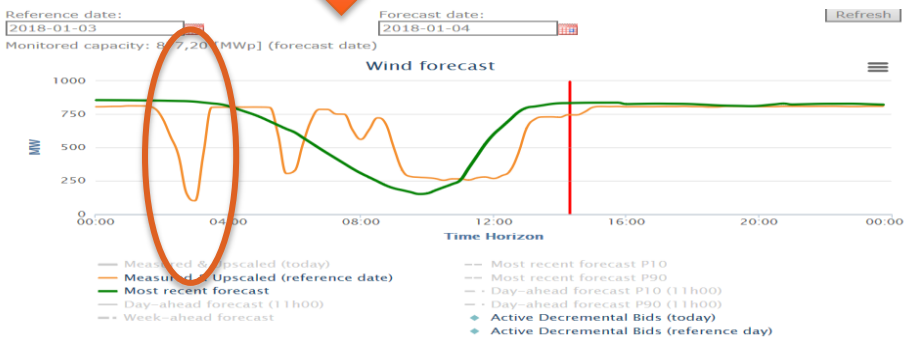


Figure 1 - Belgian offshore configuration (status 27/11/2017)

- By 2020, 2300 MW offshore production is expected to be installed;
- Windparks are located in **same geographical area** and therefore subject to weather phenomenon at same moment;
- Among those phenomenon, ELIA is concerned about **storm events.**

04.01.2018

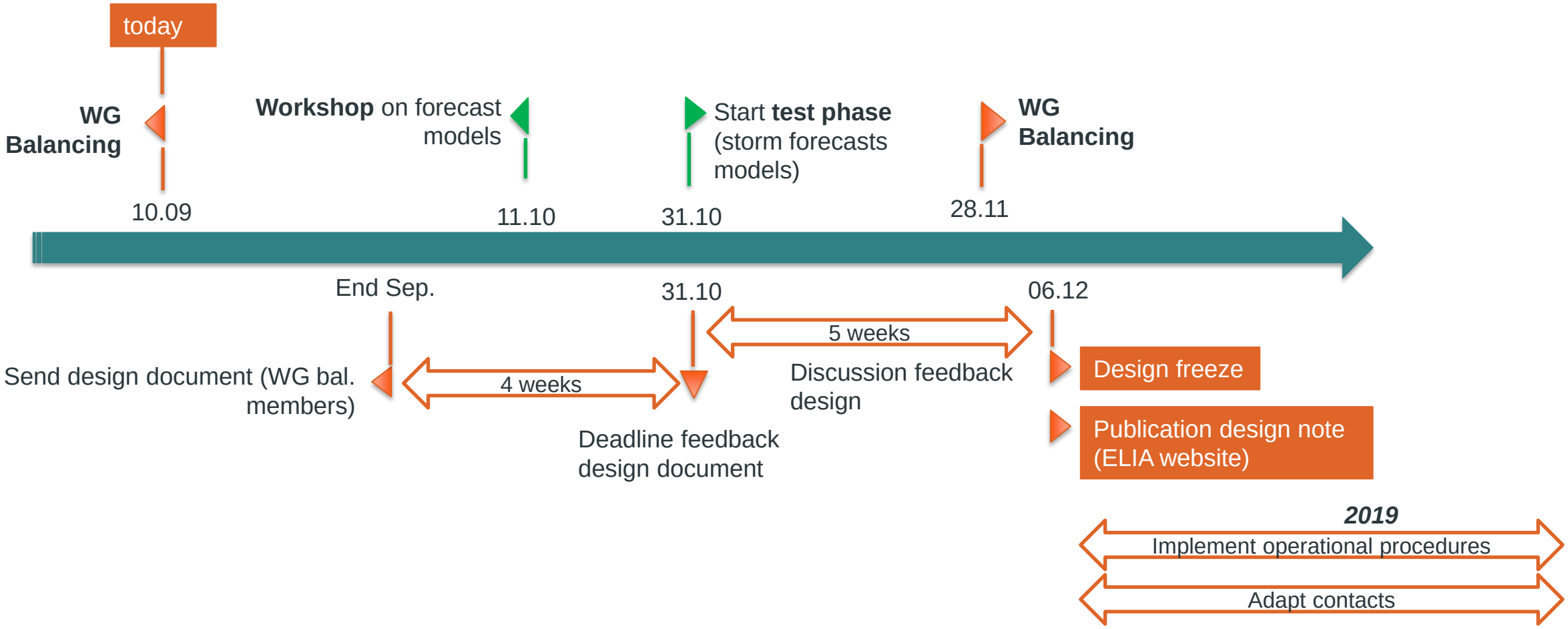
Storm event – power loss of 730 MW in 60 min (87 % of installed capacity)



Following ELIA and 3E's study on the problematic, the following action plan was put forward:

1) **Increase event' forecastabililty** by implementing dedicated storm forecasts tools and;
2) Elaborate specific **operational processes** with responsible market parties to coordinate needed actions to mitigate the identified risk.

Next steps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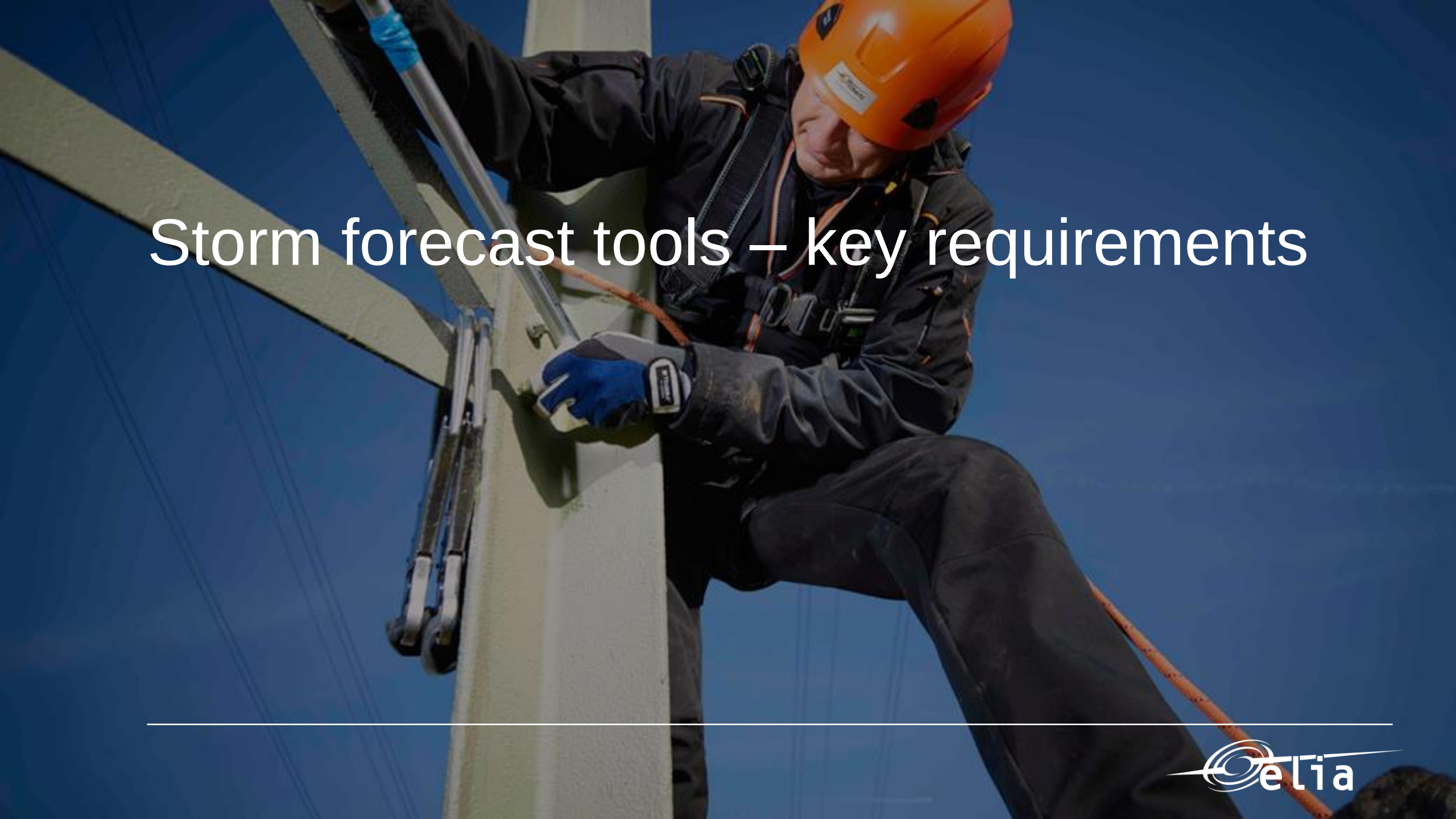


Storm forecast tools – key requirements

Executive summary of storm forecast model requirements

Input from external suppliers

- 2 separate storm forecast suppliers (complementary models)
- Hourly updates (forecasts on the next 48 hours)
- Forecasts (MW storm impact) per park and per QH;
- Expected timings (cut out and cut in) ; Inc. statistical indicators

Additional requirements

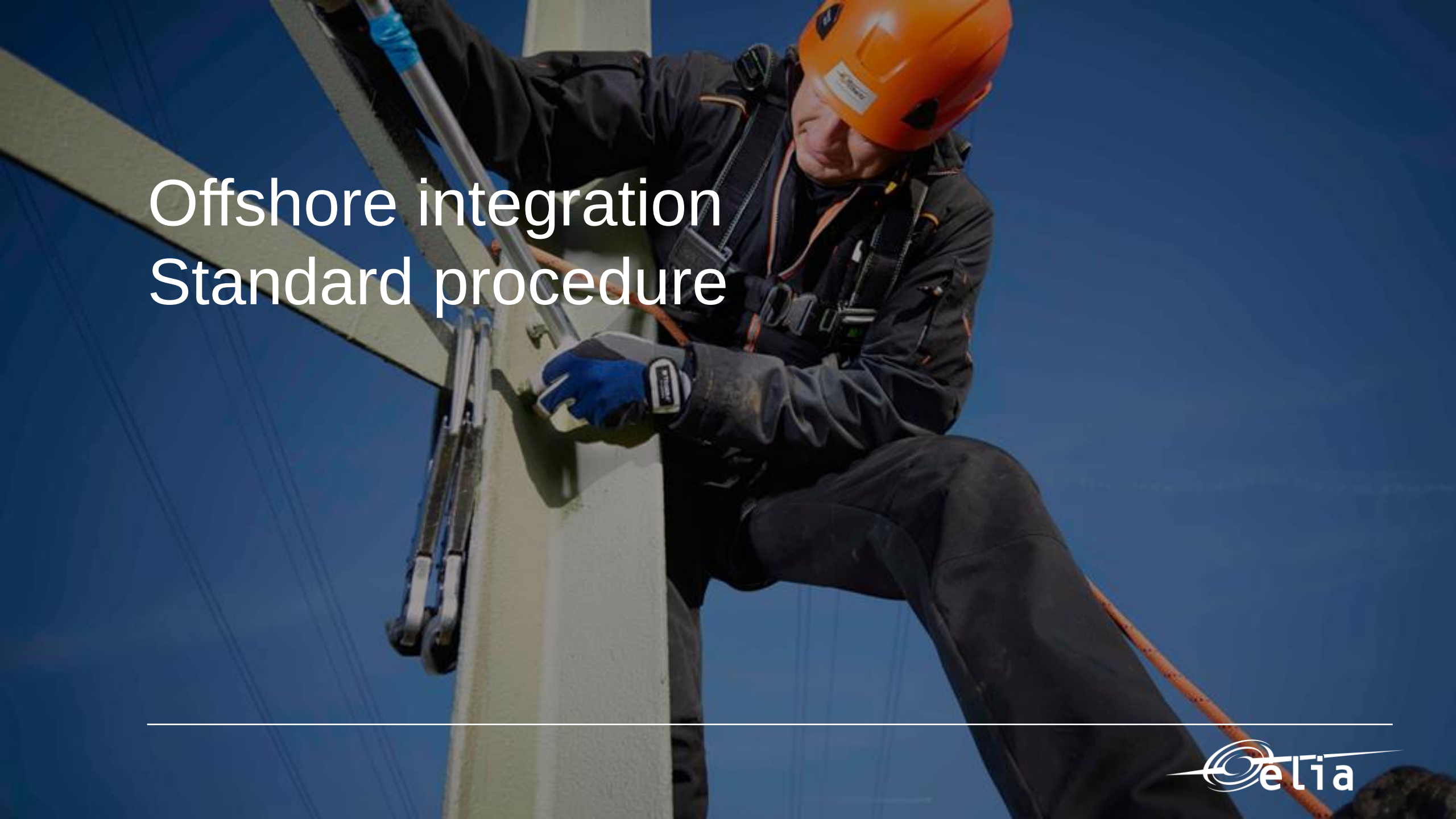
- Real time monitoring of offshore production to allow quick detection of unforecasted storm events (based on offshore measurements and wind speed forecasts)

Publications

- **Aggregated information** (offshore area) published on ELIA's website;
- **Individual** (/ park) information communicated to the relevant BRP in bilateral exchanges;
- Integration and consistency with current wind forecasts (tools and publications)

ELIA organizes a **workshop** with the storm forecast supplier on 11 October to present the model to market parties (BRPs and offshore concession holders) and identify together possible improvements (e.g: based on wind speed measures at each park (data not available to ELIA today))

If you are interested to assist, please contact thibaut.gerard@elia.be



Offshore integration
Standard procedure

Standard procedure

- Applicable **from the moment a storm is detected** (being thanks to forecasts or in real time based on measurements of offshore production)
- Operational procedure based on BRP's responsibility. **ELIA do not impose timing or specific mitigation measures**.
- In each step, expected actions from ELIA and BRP's are detailed.

Offshore BRPs contacted 2 times before storm (at storm detection and close to storm)

Important remark: exact timing will only be fixed after test phase (winter 18/19)

Step 1 to 3 – before storm event

Action ELIA

Step 1 Storm detection

BRP

Storm risk

Step 2a Storm preparation

BRP's

Gather information on mitigation measures

Step 2b Risk assessment

1500 | 600 Residual risk (MW)

900 Mitigation measures

Expected impact (MW)

Step 3 Close to real time

BRP's

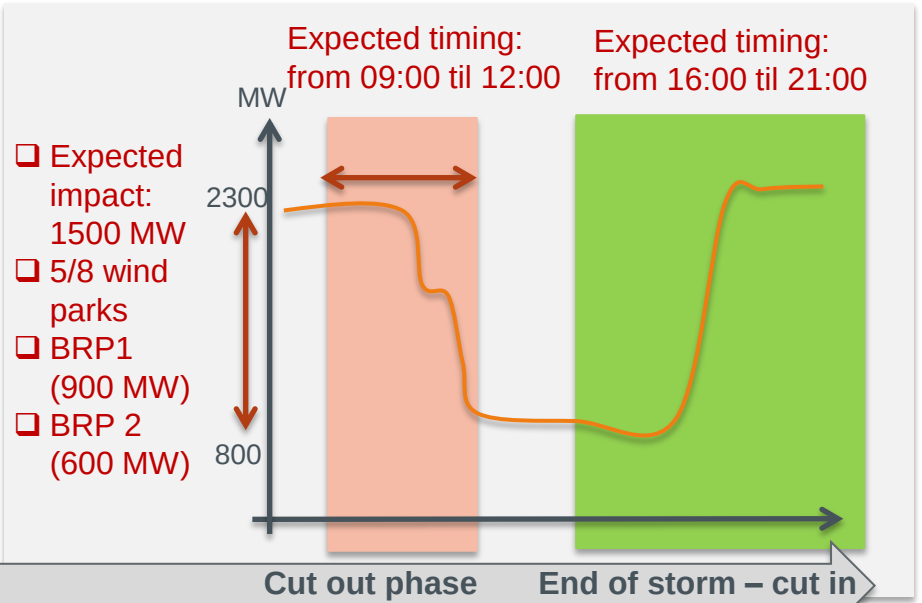
1500 | 1500 | 0 Residual risk (MW)

Mitigation measures

Expected impact (MW)

time

Storm characteristics



Action BRP

- Confirm storm risk
- expected impact
- expected timing

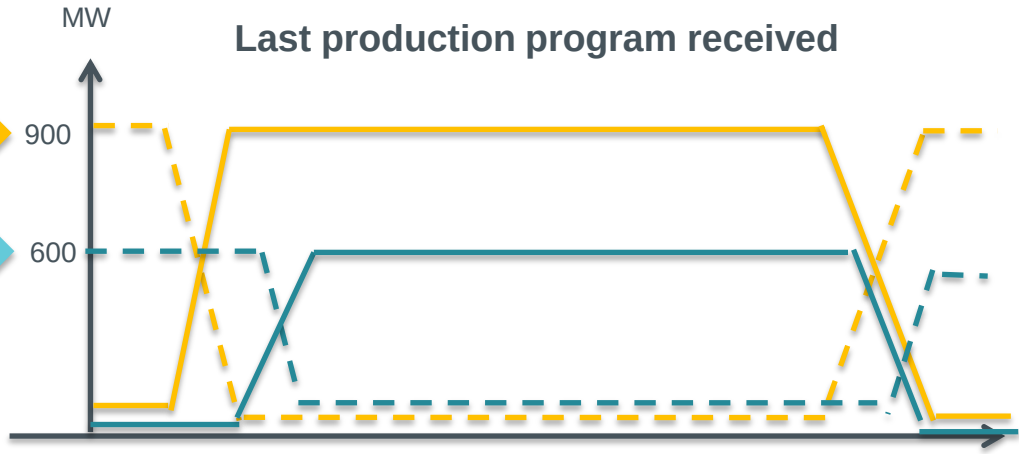
Scheduling agent (SA) 1 introduces IDPCR

- D-bid on offshore parks
- I bid on production units

SA 2 introduces IDPCR

- D-bid on offshore parks
- I bid on production units

Last production program received



storm forecast update

Incremental compensation

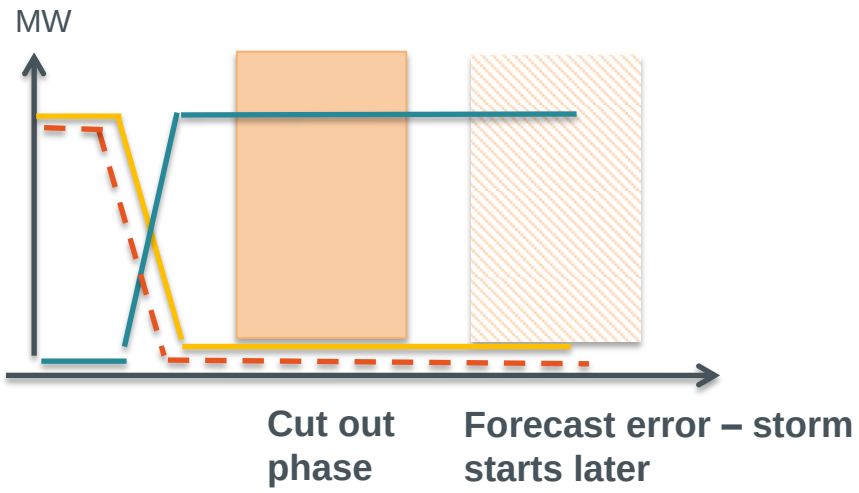
Offshore production program

Step 4 – during storm event

No real time activation of balancing means required

Mitigation measure introduced and respected

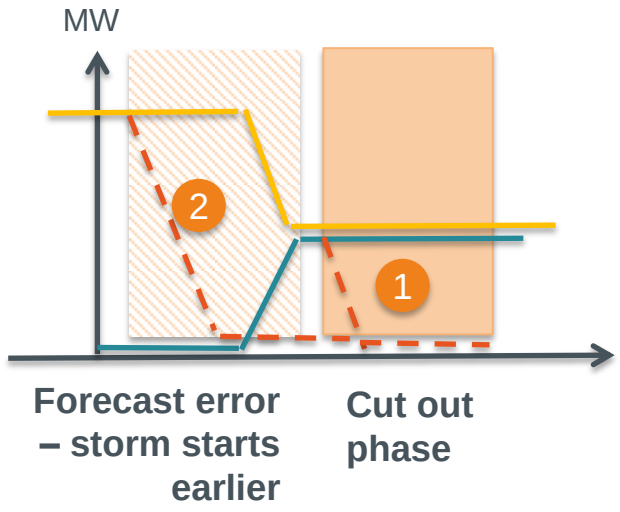
Forecast error – storm starts later



Real time activation of balancing means required

1 No mitigation measure (or not respected) while storm effectively cuts out the wind parks

2 Forecast error – storm starts earlier



As dimensioning methodology **do not consider cut-out of wind**; ELIA might activate (following existing process) slow start units **to de-saturate the activated balancing means**

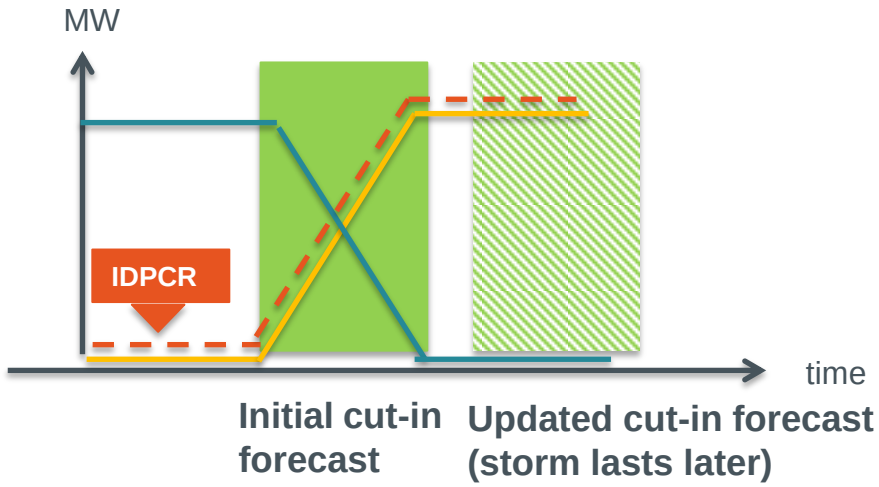
Last validated offshore schedule

Incremental compensation

Measure offshore prod.

Step 5 – cut in consecutive to storm event

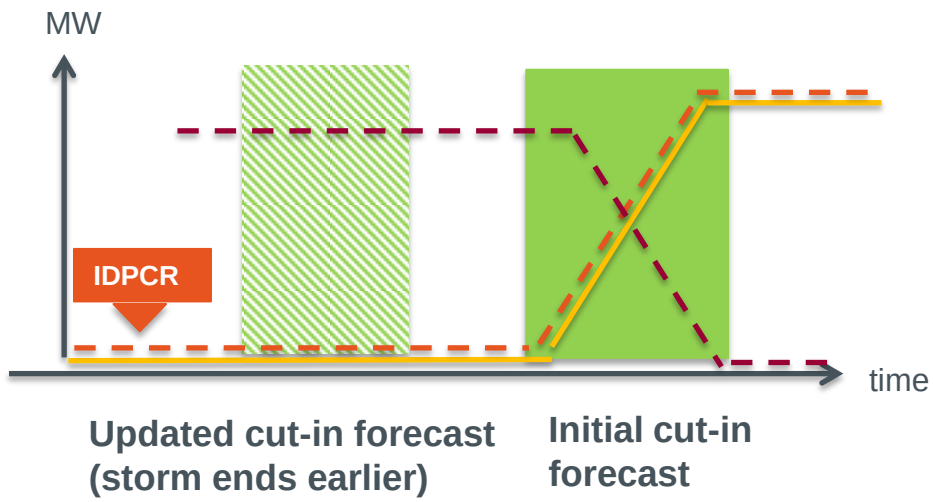
No real time activation of balancing means required



BRP's incentivized (imbalance mechanism) to coordinate by themselves the cut-in phase with end of incremental compensation.

If evolution in forecasts ; IDPCR are introduced accordingly.

Real time activation of balancing means required



ELIA is informed on the timing of the cut-in (schedules) and coordinates the end of its activated balancing means accordingly.

If evolution in forecasts ; IDPCR are introduced accordingly.

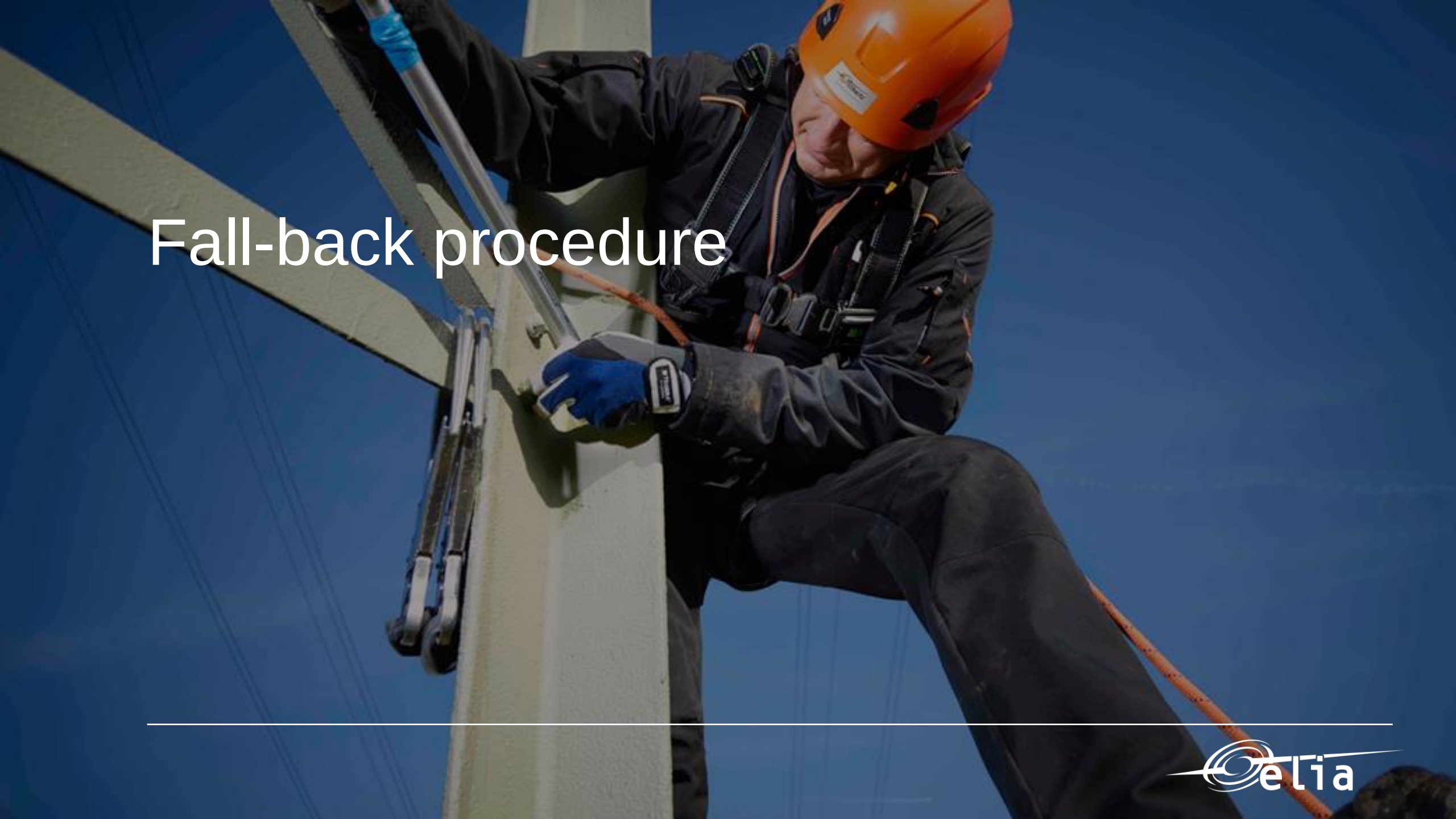
Currently no need for ELIA to set up ramp constraints to limit come-back of offshore production after storm

Last validated offshore schedule

Incremental compensation

Activated balancing means ELIA

Measure offshore prod.

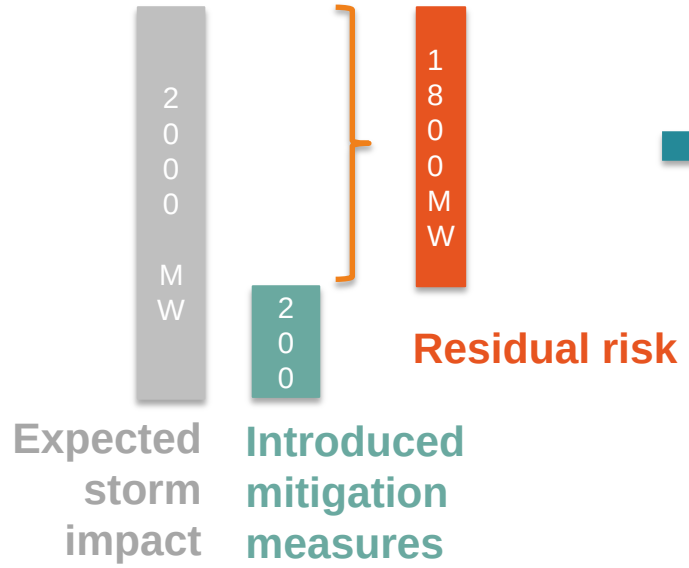


Fall-back procedure

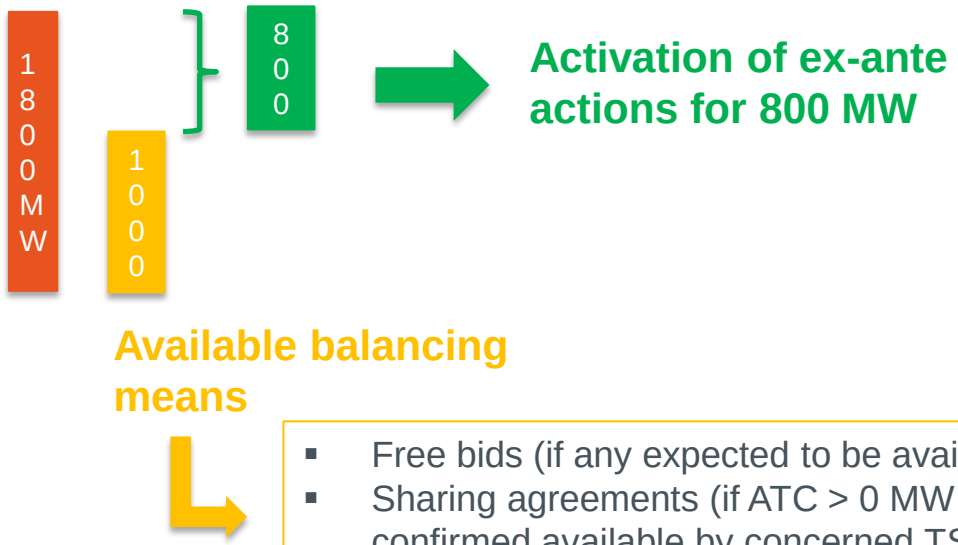
Criteria's to trigger the activation of ex ante actions

ELIA will compare the **residual risk** calculated automatically from the storm forecasts to the balancing means expected to be available during storm forecasted cut-out

Calculation of residual risk



Decision to trigger ex-ante action?



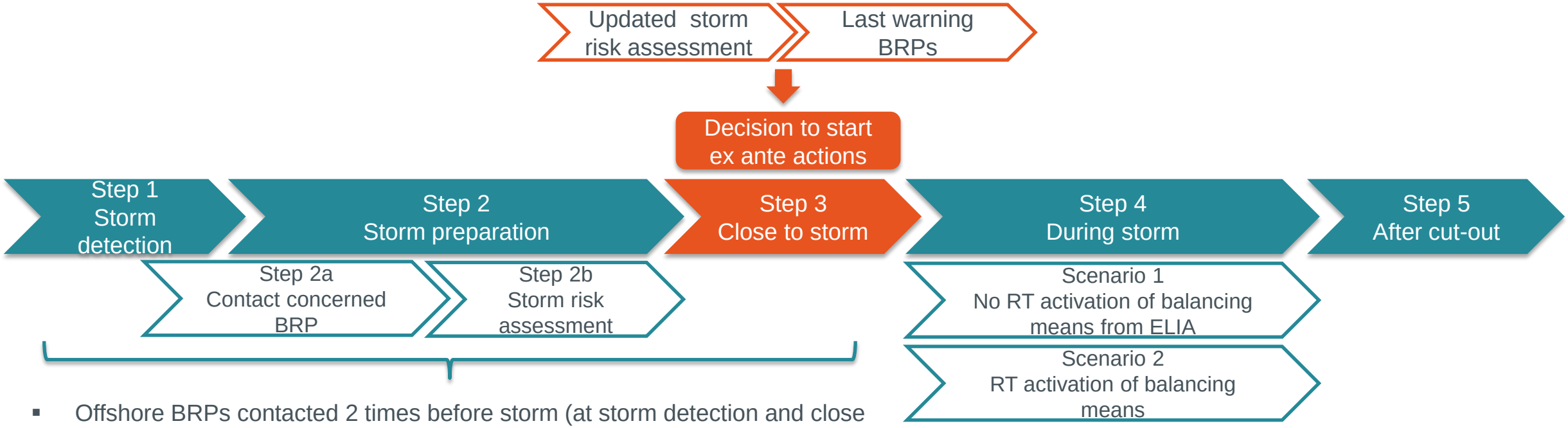
- Free bids (if any expected to be available)
- Sharing agreements (if ATC > 0 MW on borders and if confirmed available by concerned TSOs)
- Available mFRR reserves (ex: if R3 flex already activated, neutralization time will be considered in the analysis)

Fall-back procedure

Procedure to be used **in last resort**; only for situations with extreme risk (risk > available balancing means) and for which no actions from responsible BRPs are foreseen.

Decision to start ex ante actions taken **at last possible timing** to consider most recent updates (info from BRPs and from storm forecast tool suppliers)

Dedicated reporting to regulator after each activation.



- Offshore BRPs contacted 2 times before storm (at storm detection and close to storm);
- Exact timing will only be fixed after test phase (winter 18/19)

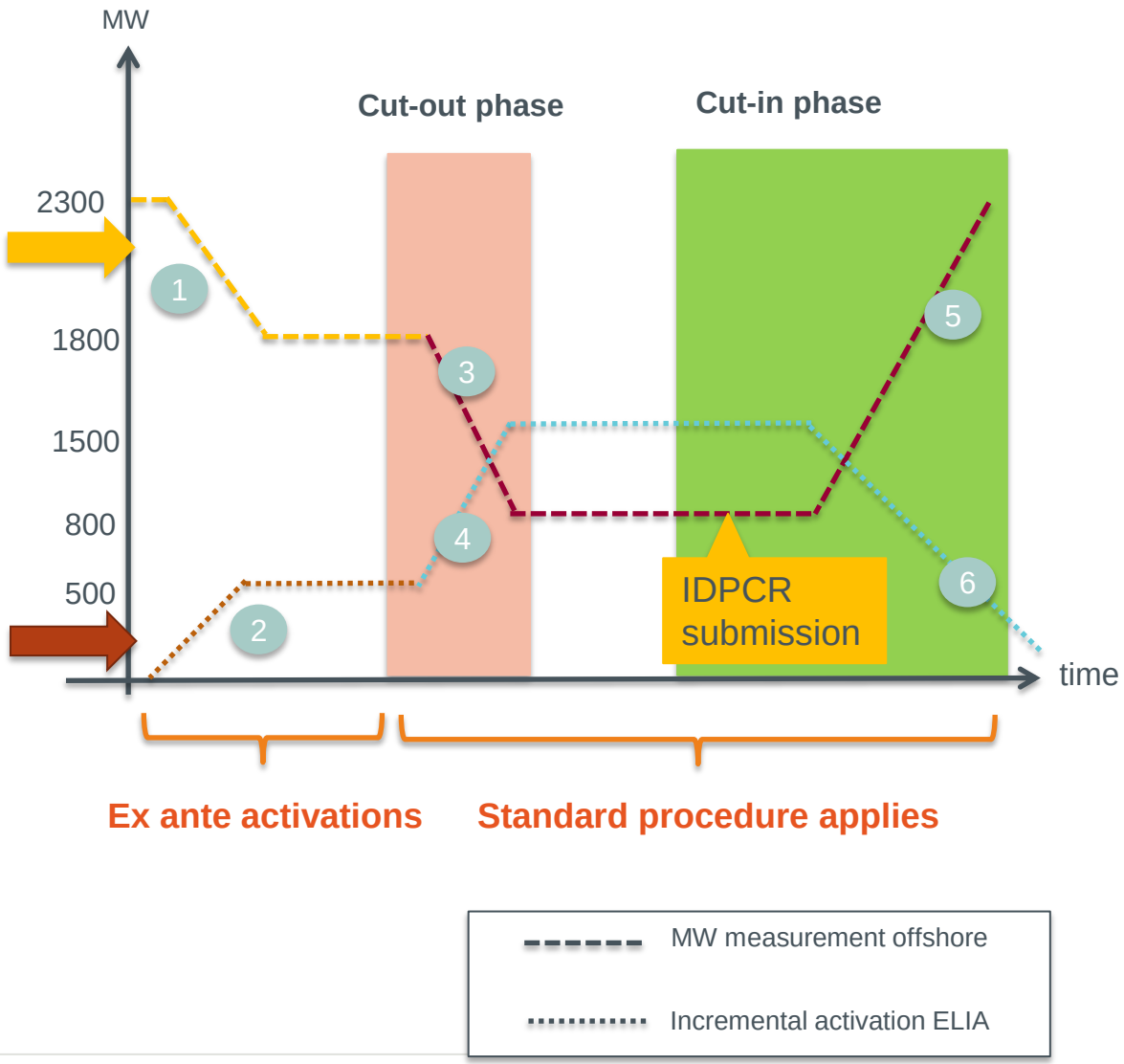
In what consist these ex-ante actions?

Decremental action

- Volume determined during the risk analysis (e.g: 500 MW)
- **Decremental bid on offshore park(s**) for which BRP's have not introduced (and have no intention to do so) mitigation measures (1);
- In case of several offshore parks concerned; pro-rata activation

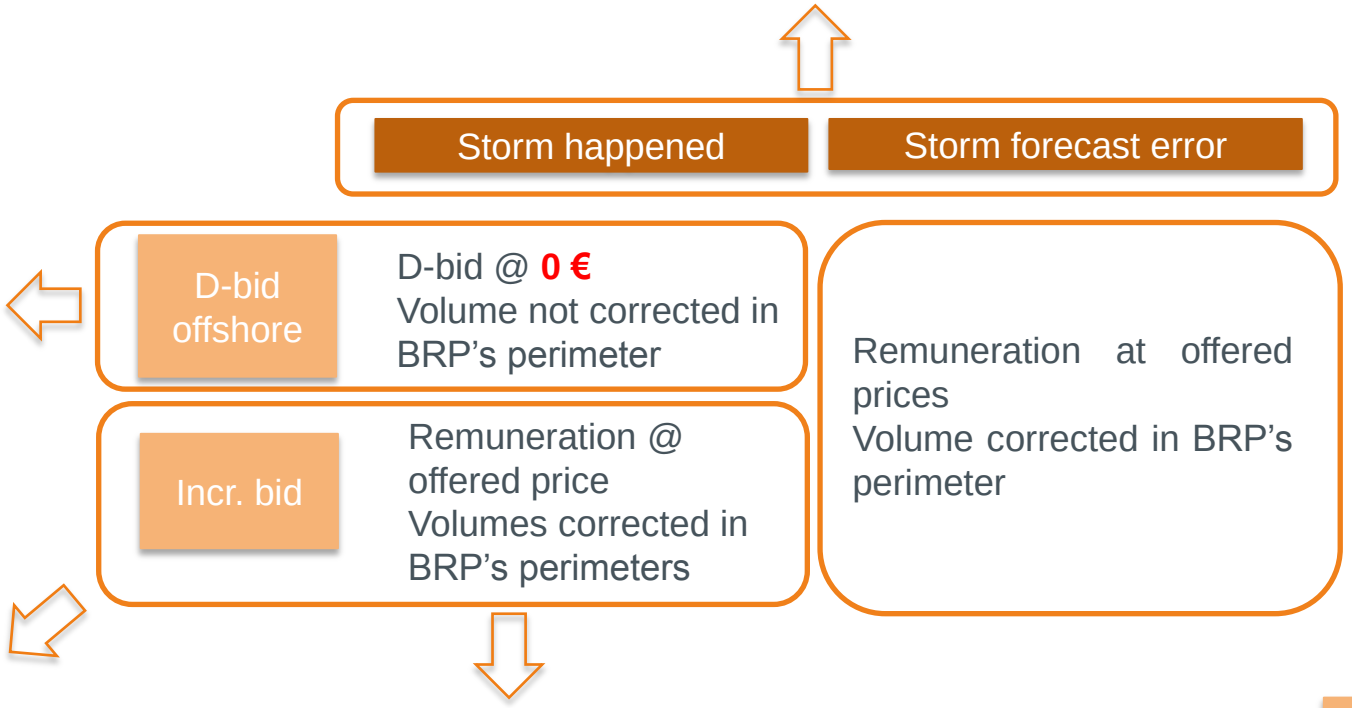
Incremental action

- Volume determined during the risk analysis (e.g 500 MW) ;
- Activation possibilities will be selected after operational analysis. Among the identified options: start of slow start units (2).



Settlement process of fall-back procedure

Based on MW offshore measurements and wind speed measures ; ELIA can determine ex-post if the storm effectively happened or if the forecasts were wrong.
Reminder: ELIA will test the forecasts accuracy during test period



In case storm happens; penalties for BRP who did not foresaw mitigation measures while the risk was announced;
+ justification;
+ possibility to apply termination procedure foreseen in BRP contract

Actions not related to offshore parks. Usual mechanism applies

Activation of balancing means consecutive to risk analysis based on available storm forecasts. In case of forecast error; **market parties cannot be penalized**.

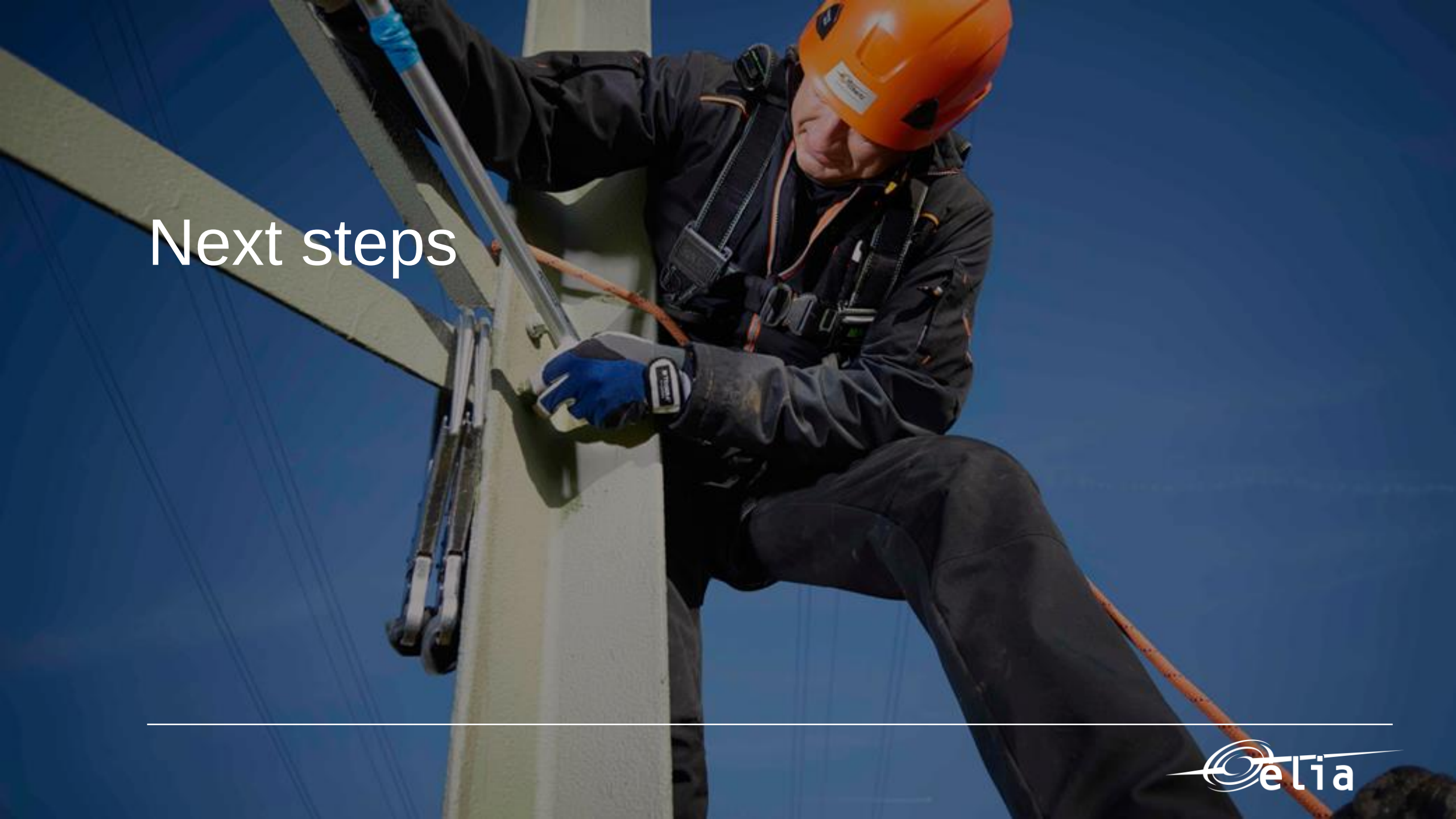
→ Costs covered via imbalance tariffs

If storm happens, significant imbalances expected (as ex-ante actions only **reduces** the risk)
→ **Ex ante** actions will not influence imbalance tariff calculation
→ Significant RT activation of balancing means expected in such scenarios
→ Costs of **ex ante** incremental actions covered via imbalance tariffs

Use of current mechanism. No specific offshore settlement process

Settlement proposal compliant with EG GL

Next steps



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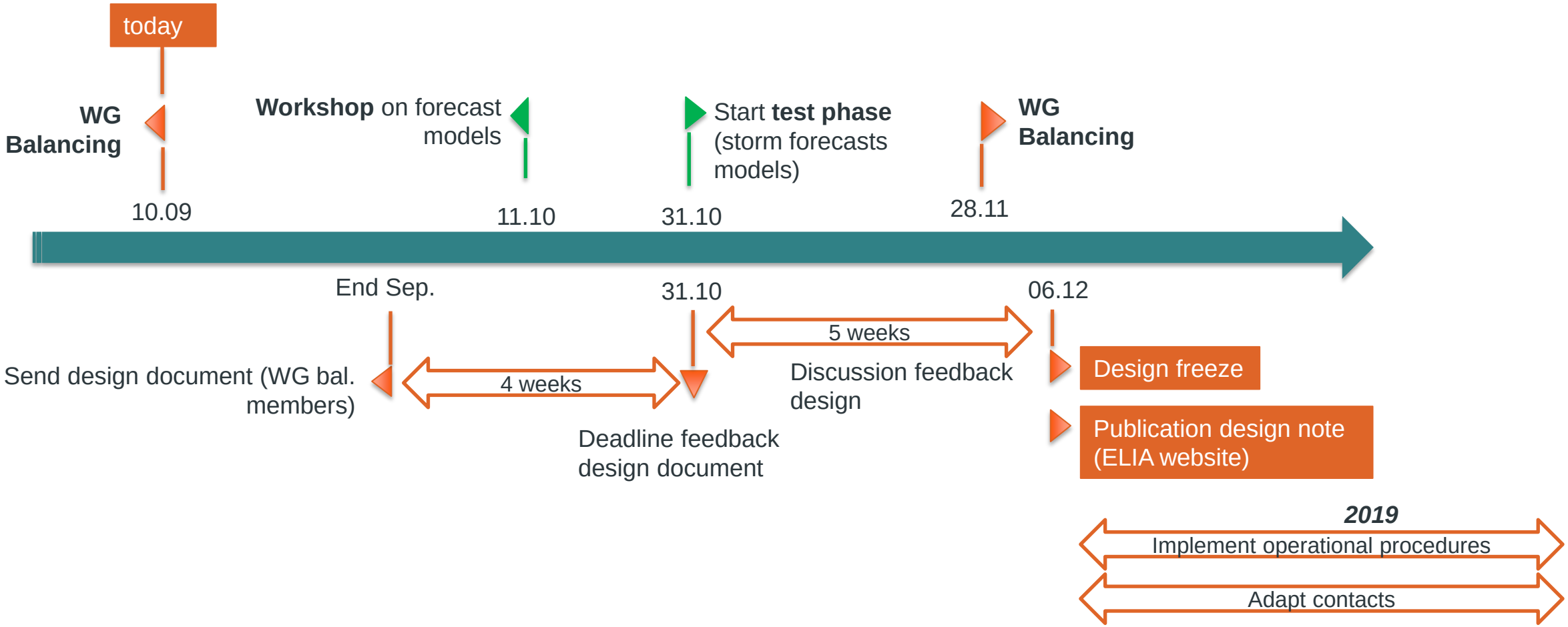
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5. Daily auctions for FCR Cooperation

Possible postponement of daily auctions for FCR Cooperation

TSOs have filed a proposal towards NRAs with the following content:

26 November 2018	1 July 2019	1 July 2020
• Daily auctions with daily products (working days)	• Marginal pricing for BSPs • Allow indivisible bids of 25MW	• Daily auctions with 4h products (all days)

Possible merge of steps

- Due to feedback received by BSPs that the implementation time is too tight, it is expected that the implementation will be postponed and possibly merged with the changes of 1 July 2019.
- However, there is no final decision yet and further guidance is expected from the FCR Cooperation regulators.
  - NRAs have taken a first step by communicating the above mentioned change during EBSG and MESC meetings on 3rd and 4th of September.
- Elia understands the importance of this issue for BSPs and will ensure proper communication as soon as we have an official request for amendment by the regulators.

*EBSG = Electricity Balancing Stakeholder Group
MESC = Market European Stakeholder Committee

6. aFRR/FCR procurement future evolution

Evolutions of the FCR/aFRR procurement

- Important feedback of the study on “separated procurement of FCR and aFRR products:
  - Not desirable that there are many implementation steps which require at the stakeholders side significant changes
  - Elia believes for the sake of efficiency and clarity that any change in the procurement approach should at least last for one year
  - Challenging complexity of having additional bidding obligations in case of asymmetrical product and a combined procurement
- The study on the new aFRR design brought new insights on
  - Gate closure times
  - Asymmetrical bidding obligations
- Expected increase of different technologies/providers delivering 200mHz R1 in nearby future

New aFRR design

- For the opening of the aFRR capacity market: a daily procurement with blocks of 4 hours
  - Crucial for demand response, RES and decentralized production
  - Confirmed by the “R2 non-CIPU pilot project” and the study on “the delivery of downward aFRR by wind farms”

	Product duration / product resolution	Base delivery	Peak & long-off-peak	8h blocks	4h blocks
Onshore wind farm	Month	0%	0%	1%	1%
	Week	2%	4%	5%	8%
	Day	**25%**	**34%**	**50%**	**65%**
BE aggregated offshore production	Month	0%	1%	1%	1%
	Week	3%	6%	7%	11%
	Day	**36%**	**47%**	**65%**	**78%**

  - The evolution to a shorter procurement time is also confirmed by Article 32(b) of the GL EB

    The procurement process shall be performed on a short-term basis to the extent possible and where economically efficient.

Conclusion: Shorter procurement lead time and shorter product duration have a positive effect on the available aFRR capacity potential.

Timings FCR cooperation

- Set on regional level and **have an important impact on the timings of the FCR/aFRR procurement**

- Foreseen timings for FCR Cooperation between July 2019 and July 2020.

FCR cooperation: GCT 15:00	Monday	Tuesday	Wednesday	Thursday	Friday
Delivery D	Wednesday	Thursday	Friday	Saturday Sunday	Monday Tuesday
	D-2	D-2	D-2	D-2/**D-3**	**D-3/D-4**

- Foreseen timings for FCR Cooperation from July 2020 onwards

FCR cooperation: GCT 08h00	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Delivery D	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday
	D-1	D-1	D-1	D-1	D-1	D-1	D-1

Impact of FCR Cooperation timings on timings aFRR/FCR procurement

- Important remark: FCR volume of Elia to be sourced via FCR cooperation has to be known 24 hours beforehand
  - Foreseen timings for combined FCR/aFRR procurement between go-live new aFRR design and July 2020

Delivery D	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
R1/R2 GCT **10:00**	Thursday **(D-4)**	Thursday **(D-5)**	Sunday (D-3)	Monday (D-3)	Tuesday (D-3)	Wednesday (D-3)	Wednesday **(D-4)**
RL: GCT 15:00	Friday **(D-3)**	Friday **(D-4)**	Monday (D-2)	Tuesday (D-2)	Wednesday (D-2)	Thursday (D-2)	Thursday **(D-3)**

  - Foreseen timings for combined FCR/aFRR procurement after July 2020
    Procurement at D-2 @ 6h00 or D-3 @16h00

Conclusion: suboptimal daily tendering regarding the timing aspect

Asymmetric bidding in the combined FCR/aFRR procurement

- Today:
  - offer mostly symmetrical volumes for aFRR
  - Bidding for symmetrical volumes with the same volume in the up and down direction
  - No bidding obligations for asymmetrical flexibility

- Opening aFRR market:
  - asymmetrical volumes will become more regular
  - Desirable to have bidding instructions for aFRR up and down separately to attract asymmetrical flexibility

But asymmetric bidding instructions in case of combined aFRR/FCR are impractical from an operation point of view → number of bids to be submitted will increase exponentially.

Way forward

Suboptimal daily tendering regarding the timing aspect

Asymmetric bidding instructions in case of combined aFRR/FCR are impractical from an operation point of view → number of bids to be submitted will increase exponentially.

Elia proposes to have a separated procurement of FCR and aFRR once the new aFRR design goes live

Separated procurement of aFRR and FCR: impact on aFRR

- Timings of the aFRR procurement will become independent of the timings of the local and regional FCR procurement
- Possibility to have logical and reasonable bidding obligations on the two aFRR directions
- Enables reduction of maximum step size from 24MW to 10MW
- Leads to separate tender for aFRR with total cost optimization for aFRR up/down:
  - Respecting the bid constraints and
  - Ensuring that selected volume must at least cover the minimum volume pursued for aFRR products in both directions.

Separate procurement of aFRR would be a positive evolution.

Way forward for FCR

- 2 options:
  - **Option 1: “one step” option**
    - Go-live of new aFRR design is aligned with the shift to full regional FCR procurement.
  - **Option 2: “two step” option**
    1. Splitting the joint procurement of FCR and aFRR when the new aFRR design goes live
    2. Merge to the regional procurement is assumed to take in any case place if a daily procurement lead time with blocks of 4 hours is in place (July 2020).
- Consequence of moving the entire FCR procurement to regional and no local auction
  - Shorter FCR procurement lead times
  - Simplified operations both at Elia as well as market participants side
  - No more asymmetric products for FCR

Way forward proposed options: impact on FCR

- **Option 1: "one step" option**
  - Go-live of new aFRR design is aligned with the shift to full regional FCR procurement.

- Procurement scheme for FCR and aFRR between the go-live of the new aFRR design and July 2020 in the "one step" option

Delivery D	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
FCR Cooperation: GCT 15:00	Friday (D-3)	Friday (D-4)	Monday (D-2)	Tuesday (D-2)	Wednesday (D-2)	Thursday (D-2)	Thursday (D-3)
aFRR: GCT 09:00	Sunday (D-1)	Monday (D-1)	Tuesday (D-1)	Wednesday (D-1)	Thursday (D-1)	Friday (D-1)	Saturday (D-1)

- Procurement scheme FCR and aFRR from July 2020 onwards

Delivery D	Monday	Tuesday	Wednesday	Thursday	Friday	Saterday	Sunday
FCR Cooperation 08:00	Sunday (D-1)	Monday (D-1)	Tuesday (D-1)	Wednesday (D-1)	Thursday (D-1)	Friday (D-1)	Saturday (D-1)
aFRR: GCT 09h00	Sunday (D-1)	Monday (D-1)	Tuesday (D-1)	Wednesday (D-1)	Thursday (D-1)	Friday (D-1)	Saturday (D-1)

Way forward proposed options: impact on FCR

- **Option 2: "two step" option**
  1. Splitting the joint procurement of FCR and aFRR when the new aFRR design goes live
  2. Merge to the regional procurement is assumed to take in any case place if a daily procurement lead time with blocks of 4 hours is in place (July 2020).

- Procurement scheme for FCR and aFRR between the go-live of the new aFRR design and July 2020 in the "two step" option

Delivery D	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
FCR GCT 10:00	Thursday (D-4)	Thursday (D-5)	Friday (D-3)	Monday (D-3)	Tuesday (D-3)	Wednesday (D-3)	Wednesday (D-4)
FCR cooperation: GCT 15:00	Friday (D-3)	Friday (D-4)	Monday (D-2)	Tuesday (D-2)	Wednesday (D-2)	Thursday (D-2)	Thursday (D-3)
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aFRR: GCT 09h00	Sunday (D-1)	Monday (D-1)	Tuesday (D-1)	Wednesday (D-1)	Thursday (D-1)	Friday (D-1)	Saturday (D-1)

Conclusion

Taking into account the current estimate that the new design of the aFRR may go live in the beginning of 2020:

- Considering the expected increase of different technologies/providers delivering 200mHz R1 in nearby future
- Considering that the asymmetric FCR products are being used less and less and that this trend will likely continue
- Taking into account the insights and results of the study on “separated procurement of FCR and aFRR products”.

→ The separated procurement of aFRR would be a positive evolution.

→ Elia believes that the advantages of the “one-step option” (quicker benefiting from shorter FCR procurement lead times and simplified operations both at Elia as well as market participants side) outweigh the advantages of the “two-step option” (longer availability of asymmetric FCR products).

This will be confirmed in the implementation study by the end of 2018 in the framework of the new aFRR design.

7. AOB

- **aFRR new design**
- **new MVAR design**
- **publication design note R3 Down & R3 2018**
- **Implementation of ToE w.r.t. R3 2018**
- **EBGL implementation**

new aFRR design: public consultation launched

- New aFRR design study:
  - facilitate the opening of the aFRR market to all technologies independent of the voltage level they are connected (TSO/DSO) and independent of the type of aFRR provider (BRP/BSP)
  - **First part:** Future design of the aFRR product.
  - **Second part:** incremental design elements that would be necessary in case of Transfer of Energy

- Important changes:
  - Contractual opening of the aFRR product to all technologies;
  - A proposal to move from a weekly to a daily procurement procedure;
  - Principles regarding portfolio based participation
  - A proposal to have a separated procurement for FCR and aFRR
  - Bidding obligations to incentivize asymmetrical bids in the capacity procurement tender.
  - A balancing energy gate closure time for submission of aFRR energy bids close to real time
  - A merit order selection & activation

- Public consultation:3rd of September until the 30th of September

- Workshop: 11th of September

- Next step: consultation of implementation plan in November

new MVAR design: public consultation launched

Study on the future design of the ancillary service of voltage and reactive power control

10/09/2018

- Drivers MVAR design study:
  - facilitate the opening of the MVAR service to all technologies independent of the voltage level they are connected (TSO/DSO) and independent of the type provider
  - EU benchmark
  - Efficiency current tendering procedure
  - Implementation & requirements Network Codes and Federal Grid Code
- Important changes:
  - move towards a mandatory provision with regulated prices;
  - Develop a new role being the Voltage Service Provider designated by the grid user (where applicable the DSO/CDSO);
  - create a coherent framework by combining the incentives to limit the need for regulation given by the tariff with incentives to actively regulate voltage & reactive power given by the MVAR ancillary service;
  - create a framework for the participation of new technologies
- Regarding price structure, the advantages and disadvantages of different configurations are described. No recommendations are made regarding price structure or price level.
- Public consultation:10th of September until the 8th of October
- Workshop: 19th of September
- Objective: finish & publish study by October 31st

Publication design notes R3 2018 & R3 Down

Website WG Balancing
http://www.elia.be/en/users-group/Working-Group_Balancing/Projects-and-Publications/R3-mFRR

R3 2018

Design note on the product evolutions to be released on 01/12/2018 for mFRR

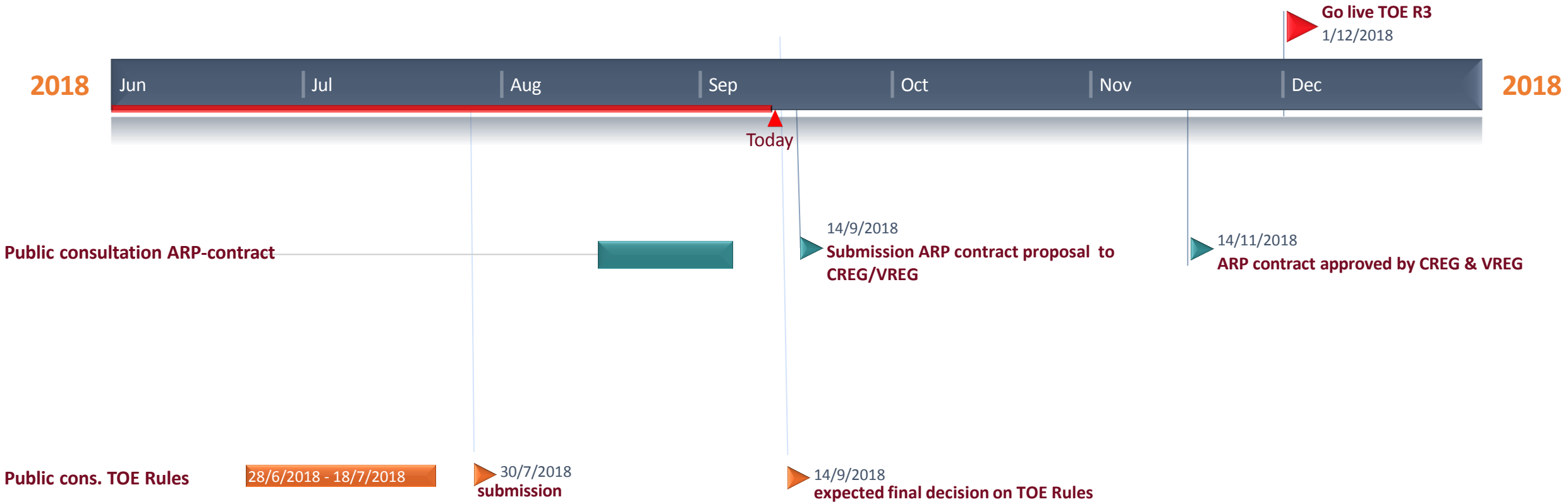
Market Development

01/08/2018

R3 DOWN PRODUCT DESIGN NOTE

22/05/2018

Planning ToE and go-live for R3 2018



Dates are indicative and subject to adaptations

AOB: Development at EU level regarding EBGL proposals

Pricing proposal (Article 30(1) & (3)) and activation purpose proposal (Article 29(3))

- Consultation expected to start this week, for 2 months: https://consultations.entsoe.eu/
- Stakeholders' workshop on October 16th at ENTSO-E

Imbalance settlement harmonization proposal

- Ongoing consultation – open until September 28th: https://consultations.entsoe.eu/markets/imbalance_settlement_harmonisation_proposal/
- Webco on Wednesday 19th September 15:00 – 17:30

Info for registration to both events will follow by e-mail.