SQSS modification
GSR029 P2/7 Alignment
Required Grid Code changes

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Contents

1. SQSS modification GSR029 – Review SQSS section 3 to align with EREC P2/7

2. Grid Code changes required

SQSS modification GSR029

What is the problem?

The DNO demand connection standard (EREC P2) has undergone some revisions and further revisions are planned. It will be necessary to revise the NETS SQSS demand connection criteria to ensure consistency at the point of interface.

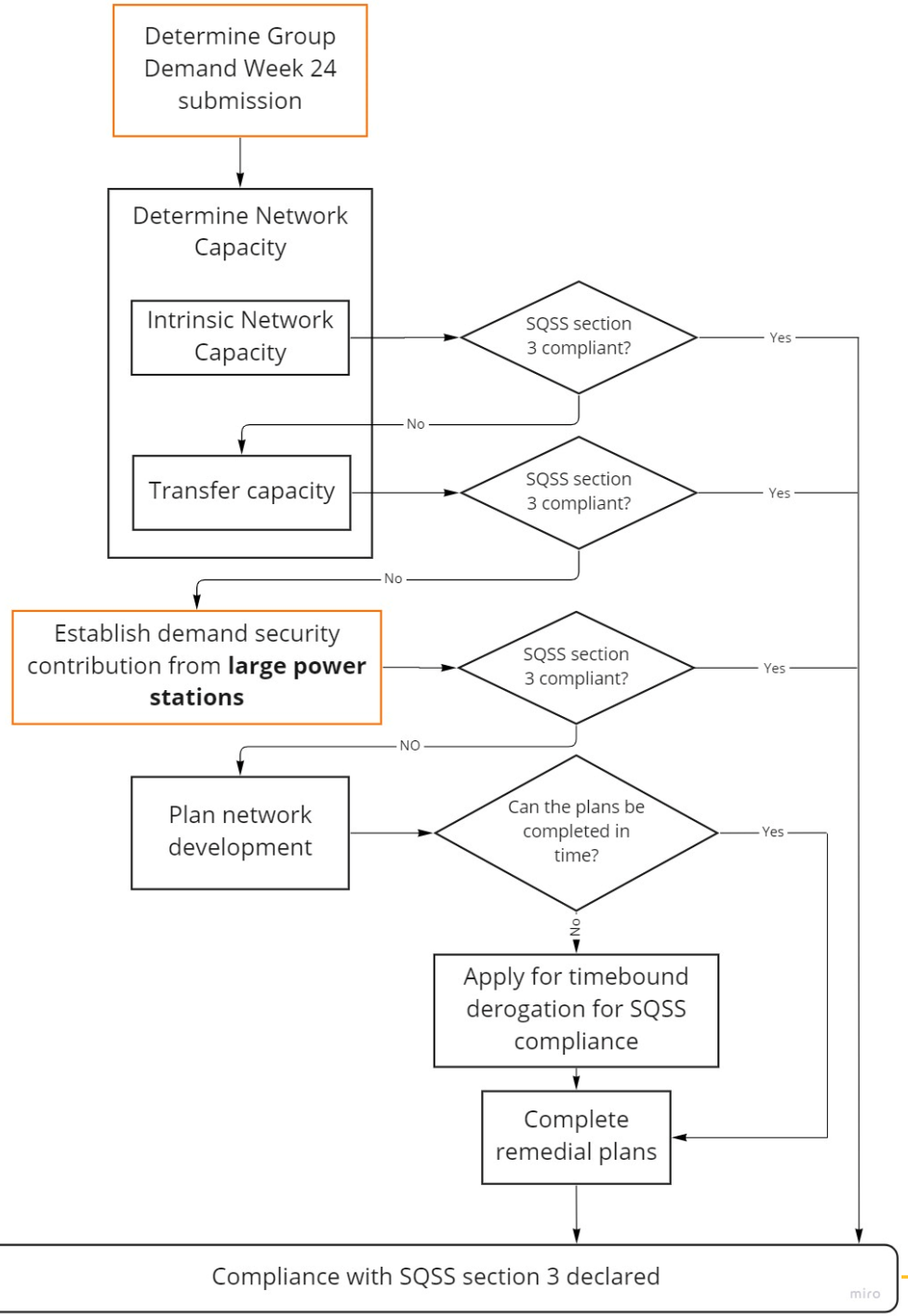
Issues to be considered

- Group demand definition: The NETS SQSS defines the size of a demand group based on the **net** transmission system demand. EREC P2/7, on the other hand, defines that size based on the total **gross** demand.
- NETS SQSS Section 3 does not allow the use of **commercial contracts** and only takes the output of embedded small power stations to the extent that it reduces the group demand.
- Assumptions for demand security contribution from **large power station** are different in NETS SQSS Section 3 and EREP 130.
- There will be a need for a significant **change to the Grid Code** to support this change.
- We need to ensure that both sets of standards continue to complement each other in an increasingly whole system world.

GSR029 Proposed Solutions

- Change the **definition of *Group Demand*** in clause 3.5;
- Introduce a definition of ***Flexible Demand***;
- Revise the background conditions specified in 3.7.3 and 3.7.4 to make it clear that the demand security contribution from embedded small and medium power stations, Demand Side Response, Energy Storage and Active Network Management scheme need to be considered;
- Remove Table 3.2 and replace with the reference to **EREP 130 as guidance** to assess the effective contribution of embedded large power stations to demand group;

SQSS Section 3 Compliance Process – Current Practice



Group Demand Calculation – Current Practice

Determine Group Demand from Week 24 submission

DNOs submit W24 group demand data as defined in Grid Code to ESO → **TOs receive the group demand data through ESO** → **TOs work out group demand based on SQSS 3.5**

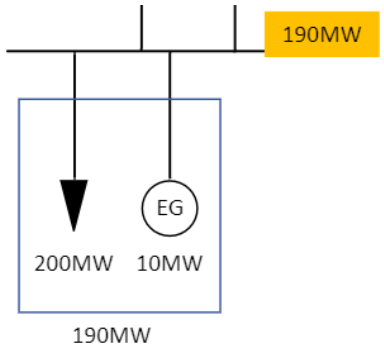
PC.A.4.3.1 Maximum demand could reasonably be imposed on the NETS (**Net Demand**)

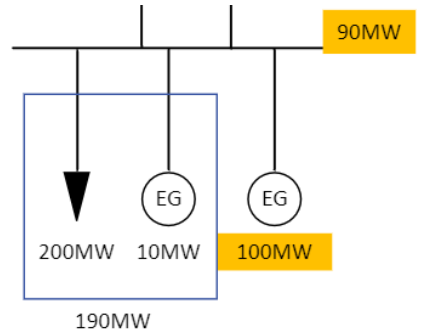
PC.A.4.3.2 (a) **Make deductions** from Small and Medium EG, customer generating plant and embedded external interconnections

DRC Schedule 11 Connection Point Data

SQSS 3.5.1
Sites with Small and Medium power stations only - use the data provided by DNOs after taking due cognisance of demand diversity
Net Demand

SQSS 3.5.2
Sites with Large power stations - add the output of large power stations to demand assumed in 3.5.1 **Net demand + Large power station output**





Grid Code DRC Schedule 11
Table 11(a)

Table 11(a)

Connection Point: _____

Connection Point Demand at the time of - (select each one in turn) (Provide data for each Access Period associated with the Connection Point)	a) maximum **Demand** b) peak **National Electricity Transmission System Demand** *(specified by **The Company**)* c) minimum **National Electricity Transmission System Demand** *(specified by **The Company**)* d) maximum **Demand** during **Access Period** e) specified by either **The Company** or a **User**	
Name of **Transmission Interface Circuit** out of service during **Access Period** *(if reqd)*.		**PC.A.4.1.4.2**

DATA DESCRIPTION *(CUSC Contract □ & CUSC Application Form ■)*	Outturn	Outturn Weather Corrected	F.Yr 1	F.Yr 2	F.Yr. 3	F.Yr. 4	F.Yr. 5	F.Yr 6	F.Yr 7	F.Yr 8	DATA CAT
Date of a), b), c), d) or e) as denoted above.											**PC.A.4.3.3**
Time of a), b), c), d) or e) as denoted above.											**PC.A.4.3.3**
Connection Point Demand (MW)											**PC.A.4.3.1**
Connection Point Demand (MVAr)											**PC.A.4.3.1**
Deduction made at **Connection Point** for **Small Power Stations**, **Medium Power Stations** and **Customer Generating Plant** (MW)											**PC.A.4.3.2(a)**
Reference to valid **Single Line Diagram**											**PC.A.4.3.5**
Reference to node and branch data.											**PC.A.2.2**

Group Demand Calculation – Proposed Changes

Determine Group Demand from Week 24 submission

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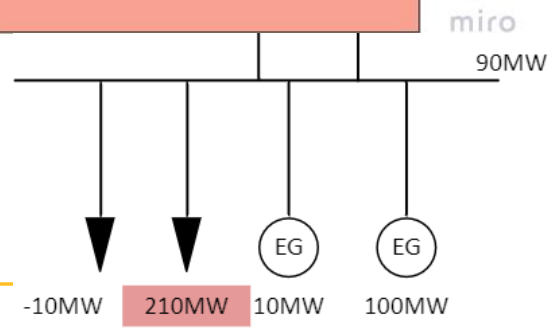
Grid Code Change Required

PC.A.4.3.1 Maximum demand could reasonably be imposed on the **User's system (Gross Demand)**

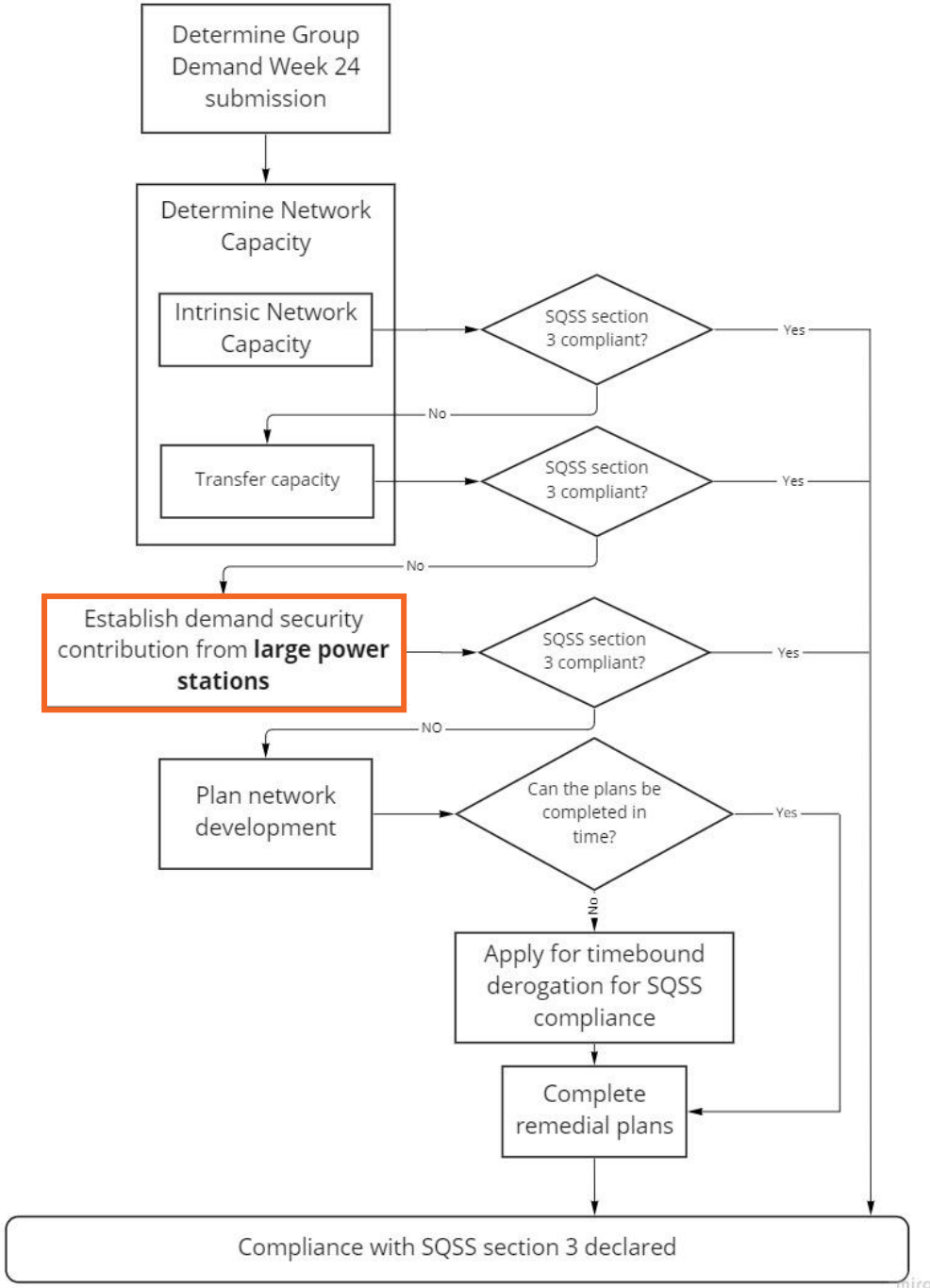
PC.A.4.3.2 (a) Consider **latent demand** from EG, DSR, ANM scheme, etc.

DRC Schedule 11 Connection Point Data **Delete row 5 for PC.A.4.3.2(a)**

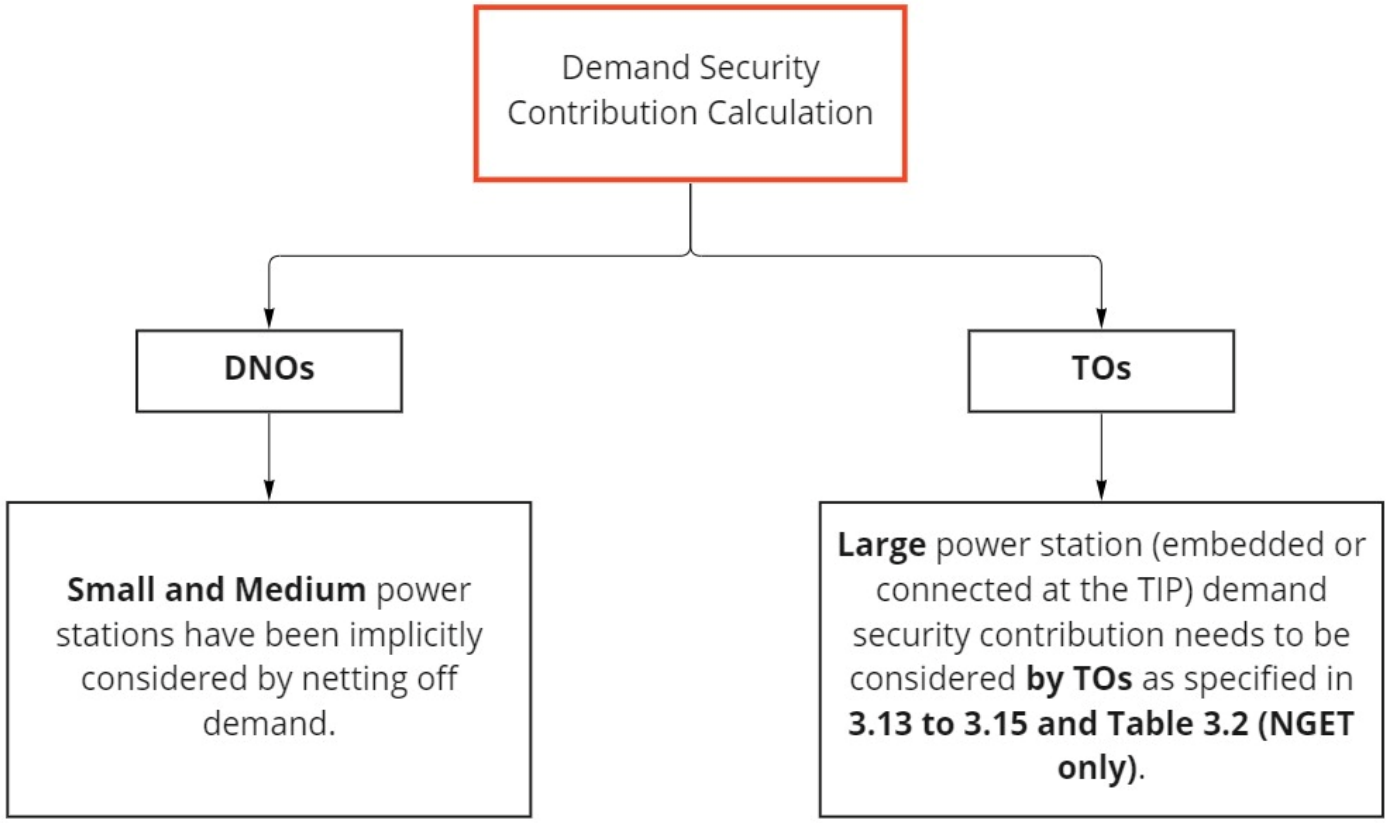
SQSS 3.5
Any site - use the data provided by DNOs after taking due cognisance of demand diversity
Gross Demand



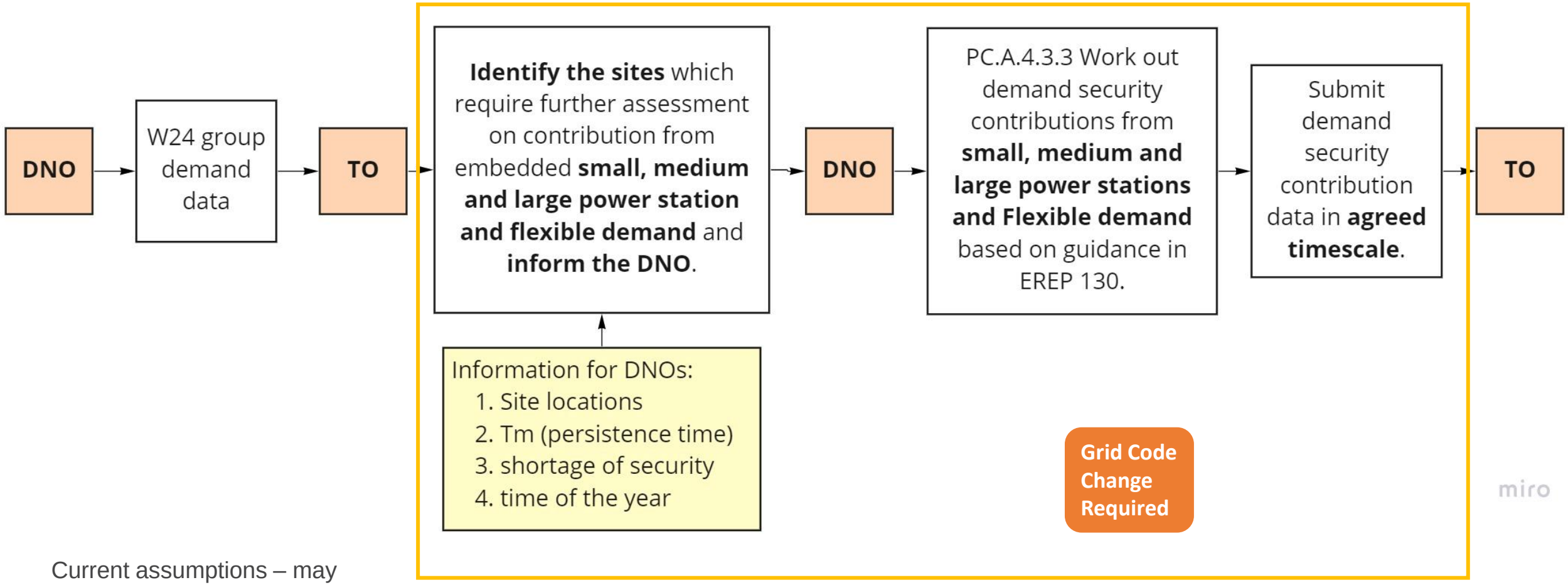
SQSS Section 3 Compliance Process – Current Practice



Demand Security Contribution Calculation
Current Practice

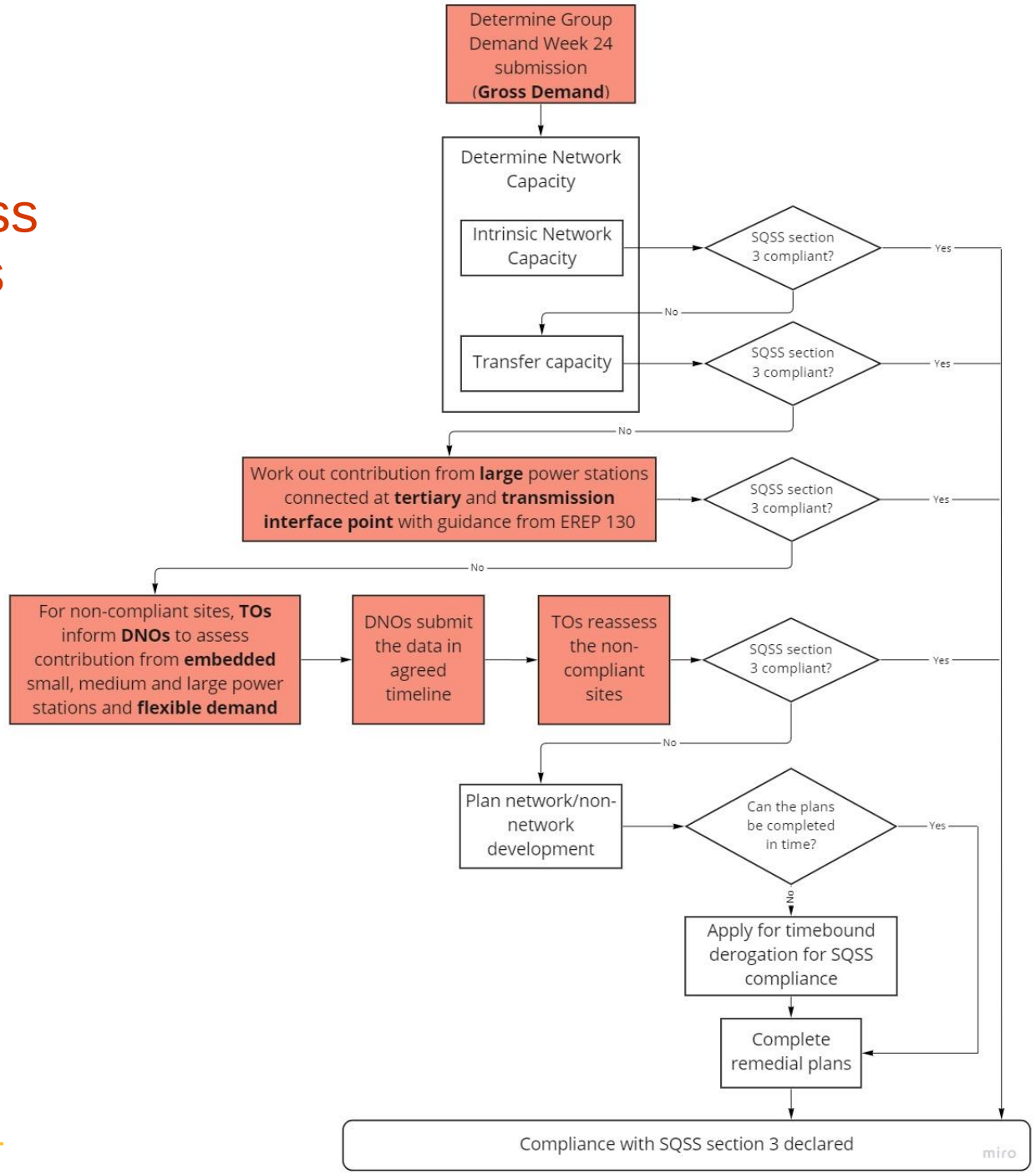


Demand Security Contribution Calculation
Proposed Changes



Current assumptions – may change as the solutions are being refined.

SQSS Section 3 Compliance Process Proposed Changes



Grid Code change required

Relevant Grid Code Sections:

- Planning Code
  PC.A.4.3 Connection Point Demand (Active and Reactive Power)
- Data Registration Code
  Schedule 11 Connection Point Data
  Table 11(a)

Changes:

1. Change Connection Point Demand from net demand to gross demand.
2. Network Operators need to consider latent demand from EG, flexible demand, etc.
3. Define that demand security contribution can be provided by embedded generation and flexible demand.
4. Establish the process of information exchange between TO and Network Operators.

Timeline:

SQSS GSR029 workgroup consultation is planned in February 2023 subject to the progress of the workgroup . Grid Code mod to be proposed in March 2023 as a standard modification with a workgroup.

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