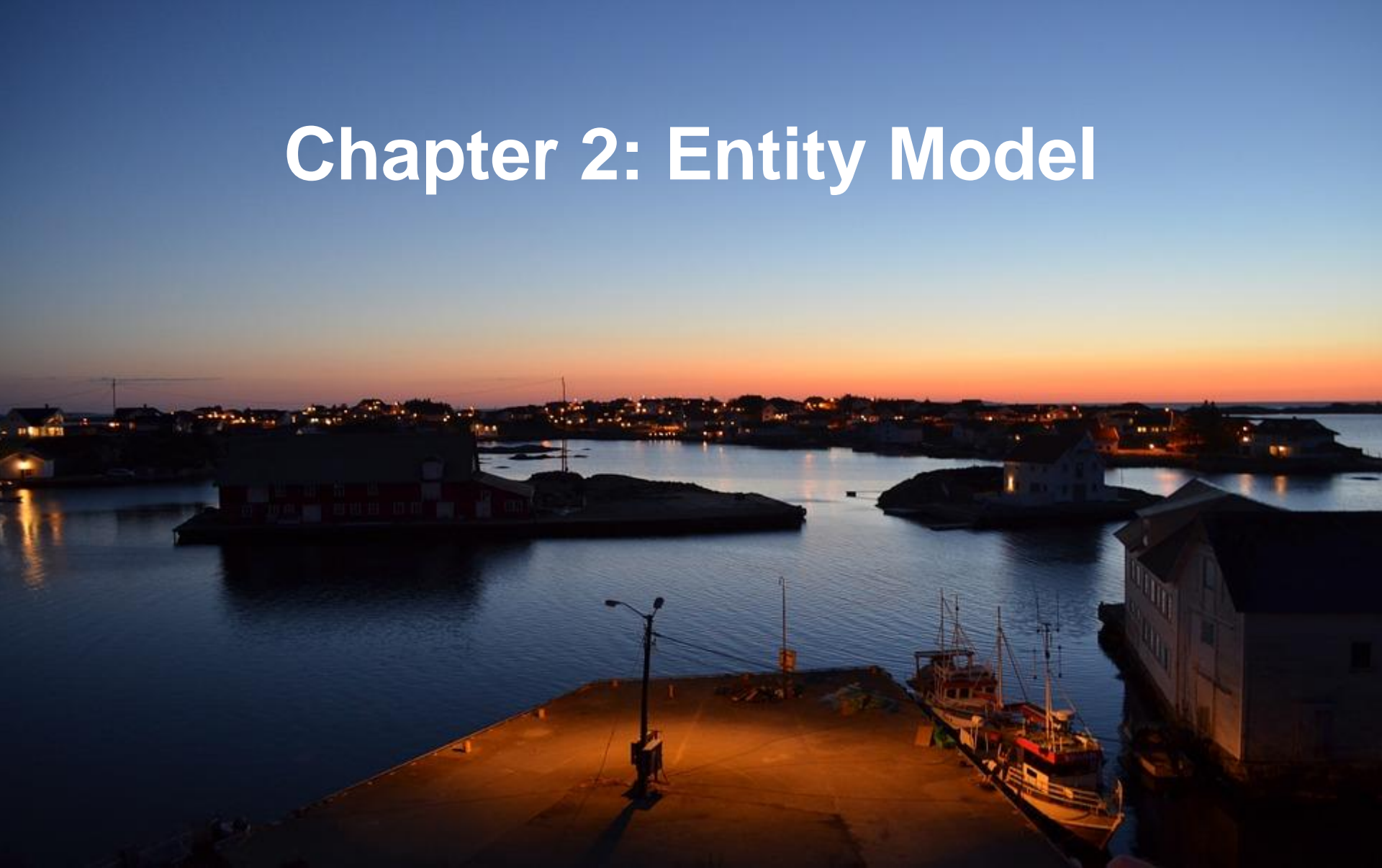


Chapter 2: Entity Model

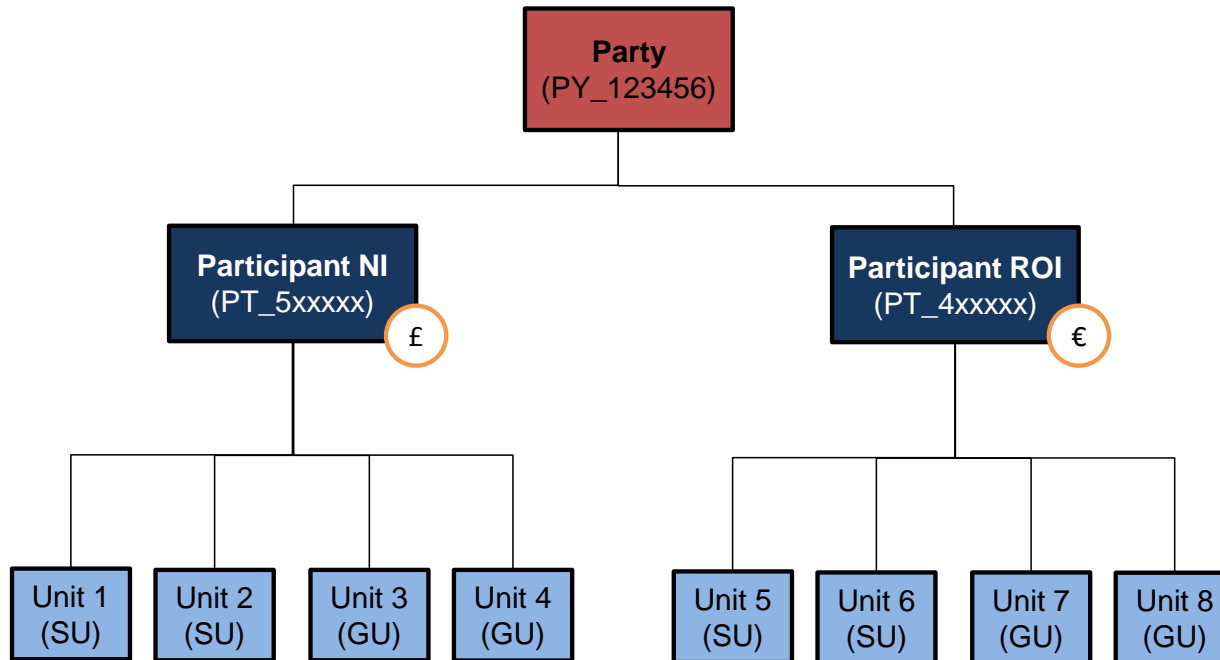


Entity Model – 1/5

The Trading and Settlement Code requires the use of certain “entities” to represent a company and its units. This allows the correct representation of the unit for the purposes of TSC trading, settlement and invoicing, and credit cover calculations.

The setup of these Entities is referred to as the ‘Entity Model’.

The basic entity model is shown below. A description of the each entity is given on the next slide.



Entity Model – 2/5

Entity	Description
Party (PY_nnnnnn)	The company that has acceded to the Trading and Settlement Code and is thereby bound by the Code.
Participant (PT_nnnnnn)	A company or a business division of the company which has been designated as the “Participant” in relation to units that have been registered for the TSC. A reference to a Participant shall be taken as a reference to the relevant Party as well. A separate instance of a Participant is required, as a minimum, when a Party has units registered in both Northern Ireland (NI) and Ireland (ROI). Each separate instance of a Participant can be for the same business division or company under the same Party.
Unit (GU/SU etc.)	A generation, supply or other type of unit registered in order to allow trading and settlement of generation and consumption of electricity under the TSC.

There are additional entities such as Trading Sites which also form part of the entity model. These are described in more detail later in the training course.

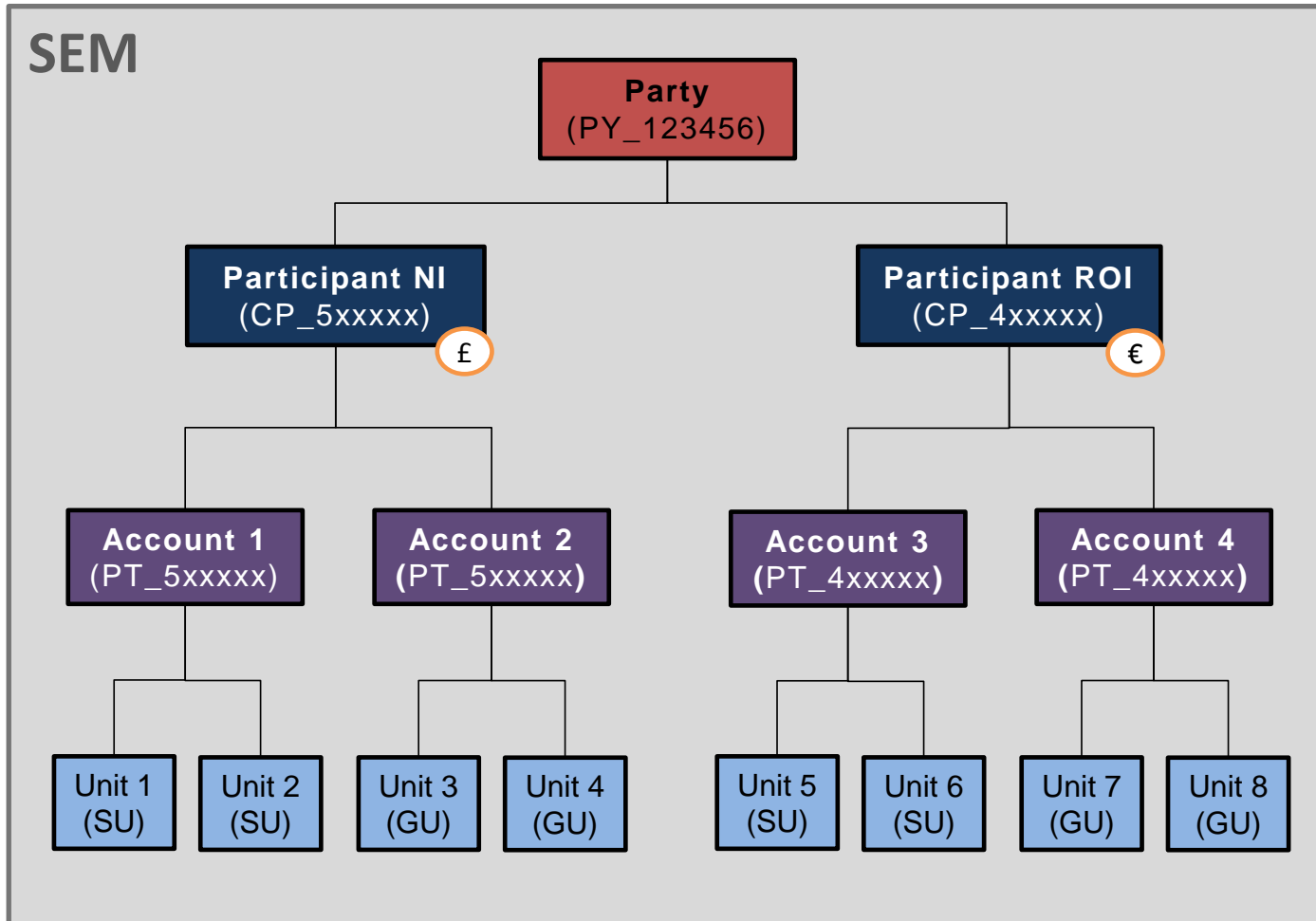
Entity Model – 3/5

The I-SEM Arrangements have a different entity model to the current SEM Arrangements. The key difference is that ‘Accounts’ are no longer relevant. These were previously used to separate supplier and generator invoices. With the new market design and the concept of sales/purchases these can be presented on the same settlement documents now.

Also note that the Participant ID’s i.e. “PT_nnnnnn” are to be used for reference to the Participant, rather than the reference to the old “Account”.



Entity Model – 4/5

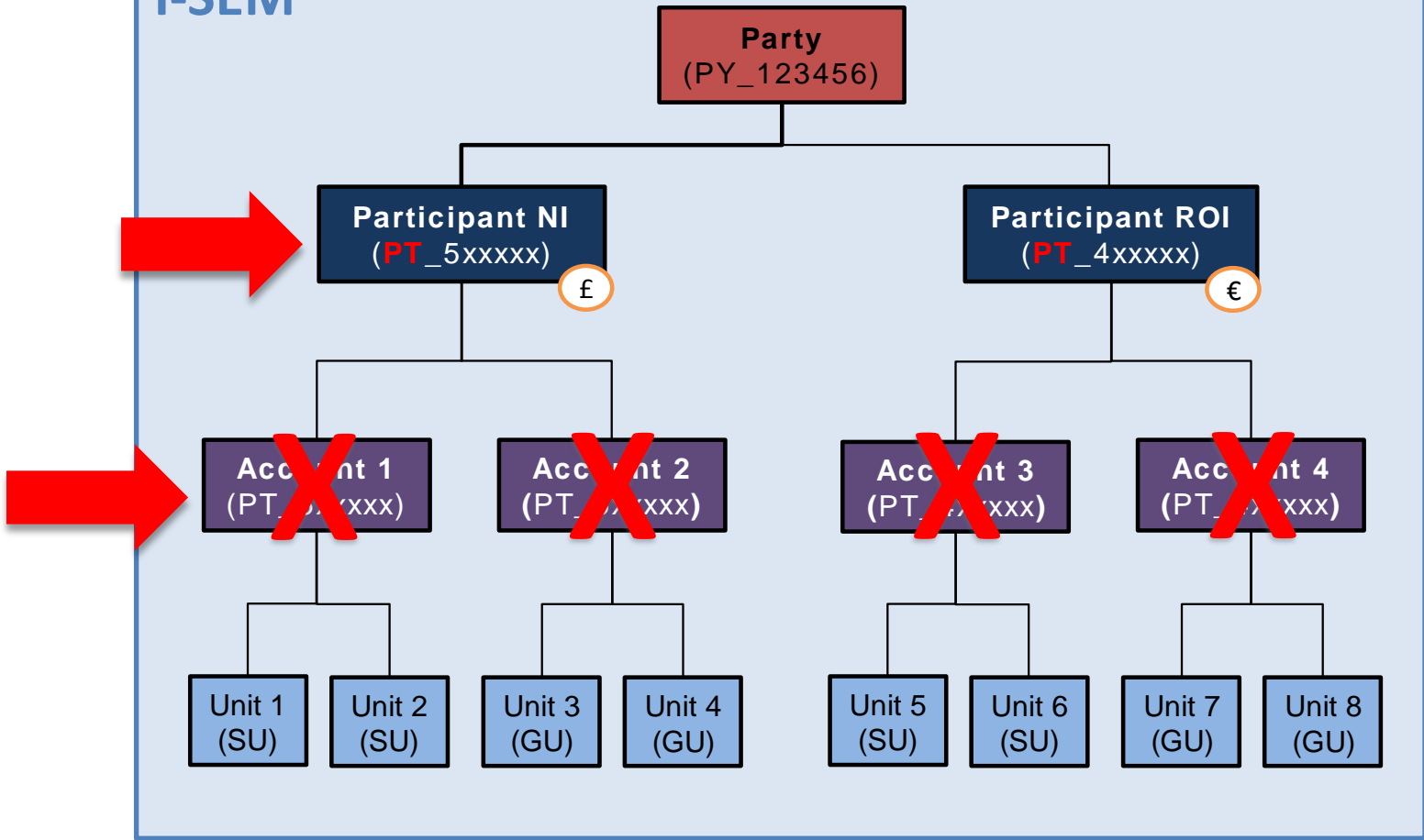


No longer relevant under I-SEM

Entity Model – 5/5



I-SEM



Entity Model (Implications)

The implications of the new entity model for the I-SEM arrangements are:



- Only **one Participant per jurisdiction per Party** is allowed, except with Regulatory approval to have more than one per jurisdiction – ***same as SEM arrangements.***
- **Credit cover** is calculated and maintained at the Participant level – ***same as SEM arrangements.***
- **Settlement Documents** are issued for all payments and charges related to all Units that are under the same Participant – ***different to SEM arrangements.*** Under the SEM arrangements this was at the lower Account level.
- **Payments** are made at the Participant level to a single bank account – ***different to SEM arrangements*** which had separate banking transactions for each lower level Account.

Naming Standards

The naming standard for the high level I-SEM Entity Model is provided below.

Entity	Naming Convention	Description
Party	PY_nnnnnn	means any person who is a party to the Framework Agreement and is thereby bound by the Code, and shall include its successors and permitted assigns.
Participant	PT_nnnnnn	means a Party or business division of a Party which at the relevant time has been designated as, or deemed to be, the “Participant” in relation to any Units which have been registered in accordance with the Code.
Trading Site	TS_nnnnnn	means one or more Generator Units and at most one Trading Site Supplier Unit of which, with the exception of Trading Sites that contain Generator Units that are Aggregated Generator Units or Demand Side Units, all Generator Units are covered by a single Connection Agreement, or in the event that no Connection Agreement exists, all such Units are located on a Contiguous Site, or as described in section B.9.

Naming Standards (Units)

The Unit ID's used for units in the I-SEM arrangements will be exactly the same unit IDs used under the SEM arrangements. If a unit was named GU_500001 in SEM then the same ID will be used for I-SEM.

The naming standard and a brief description of the I-SEM units is provided below.

Entity	Naming Convention	Description
Generator Unit	GU_nnnnnn	means one or more Generators, other item of Dispatchable plant including: Aggregated Generator Unit, Energy Limited Generator Unit, Hydro-electric Generator Unit, Pumped Storage Unit, Battery Storage Unit, Trading Unit, Wind Power Unit or Dual Rated Generator Unit;
Demand Side Unit	DSU_nnnnnn	Is one or more Demand Sites which form a Demand Side Unit under the TSC and comply with the criteria set out in the TSC. Demand Side Units are considered dispatchable plant.
Supplier Unit	SU_nnnnnn	Is a notional unit for a collection of Demand either from retail, commercial or industrial sources. There are also different sub types namely, Trading Site Supplier Unit and Supplier Unit.
Assetless Unit	AU_nnnnnn	Is a notional unit that allows a trader without a generation or supplier unit to take positions in the ex-ante markets (Day Ahead and Intraday) with the subsequent settlement of any imbalances under the TSC. Assetless trading increases the level of trade in the ex-ante markets, thereby increasing liquidity and reducing the potential for price separation between markets due to a lack of competition.
Trading Unit	TU_nnnnnn	Is a notional Generator Unit to facilitate net trading in ex-ante markets and imbalance settlement in respect of an Autoproducer Site only.

There are also Interconnector related units. These are not discussed in this training course as they are specific to the Interconnector Owner and Shipping Roles and not relevant to Trading Participants.

Types of Units

The categorization of unit types is different for the I-SEM arrangements to the categorizations for the SEM arrangements. The comparisons between SEM and I-SEM arrangements are provided below:



Unit Type	SEM Relevant	I-SEM Relevant	
		Balancing Market Bids	Imbalance Settlement
Generation Unit: Dispatchable	✓	✓	✓
Generation Unit: Non-Dispatchable (either controllable or non-controllable)	✓	✗	✓
Demand Side Unit	✓	✓	✓
Aggregated Generation Unit	✓	✓ ✗ #2	✓
Supplier Unit (TSSU, SU)	✓	✗	✓
Assetless Unit	✗	✗	✓
Trading Unit	✗	✗	✓
Interconnector User#3	✓	✗	✗
Netting Generator Unit#3	✓	✗	✗
Error Supplier Unit#3	✓	✗	✗

#1 – Units/Unit IDs are sometimes referred to as ‘Resources/Resource Names’ respectively in the Balancing Market Interface.

#2 – Dependent on whether the AGU is classified as Dispatchable or Non-Dispatchable.

#3 – These units are not longer relevant under I-SEM arrangements

Types of Supplier Units

Supplier Units have further sub-categorisations dependent on their use. There are two types of sub-categorisation.



SEM I-SEM

Sub-category	Description
Supply Units (SU)	Consist of supply to retail end customers only, or a combination of retail and industrial customers. They can also be associated with multiple trading sites to provide metering the onsite demand of the trading sites.
Trading Site Supply Units (TSSU)	Supplier units that are only used for a single trading site e.g. a generator with onsite demand that they want to be netted off their generation as part of settlement. Under the I-SEM arrangements, TSSUs are really only necessary for Autoproducer sites and Demand Side Units.

Trading Sites – 1/3

The SEM concept of a Trading Site has been maintained for the I-SEM arrangements.



Most Generation Units must have a Trading Site associated with them – with a few exceptions as outlined below.

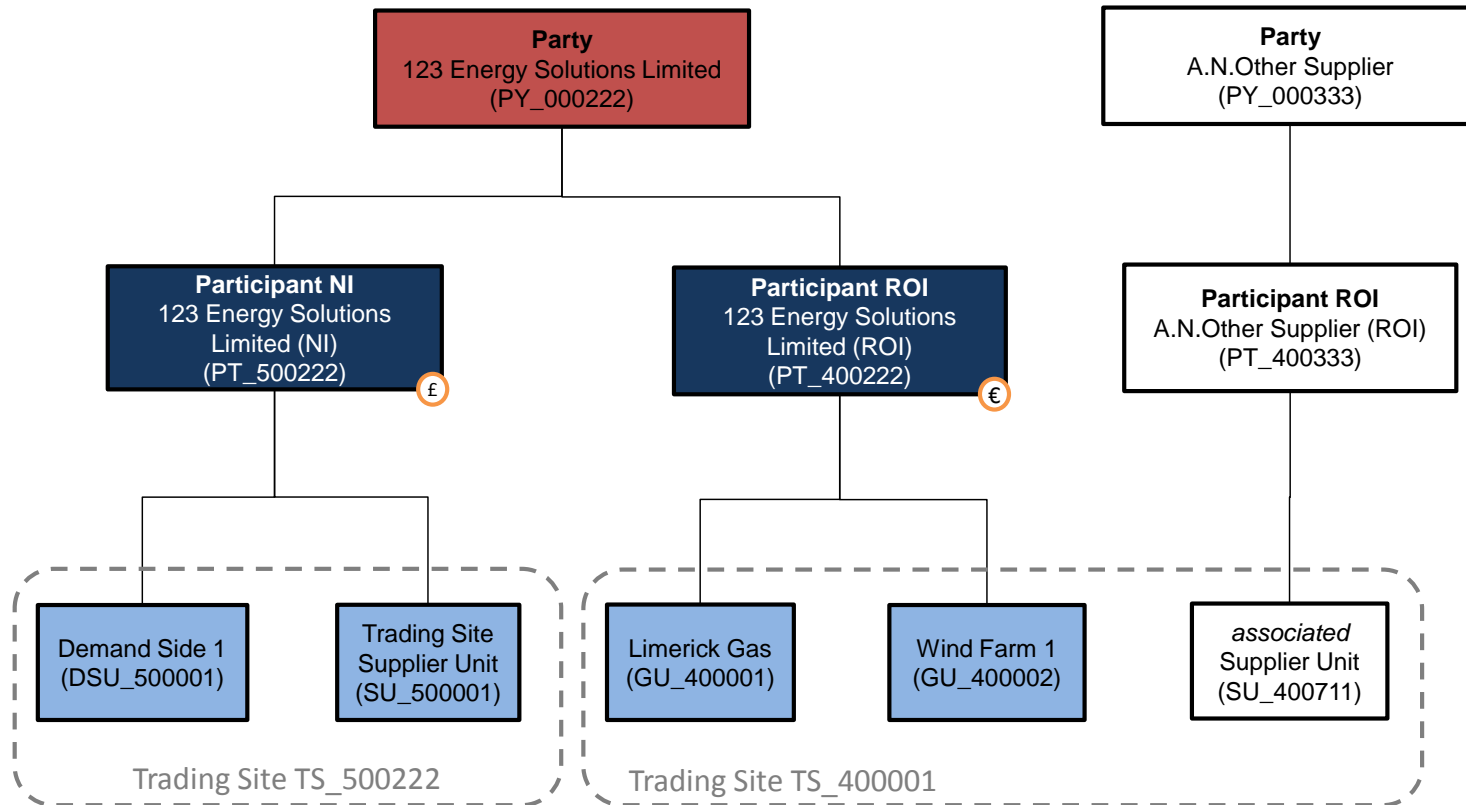
The Trading Site represents the connection point of a Generator Unit or group of Generator Units. Usually, the Trading Site maps to the connection agreement, but the Grid Code allows sites to be subdivided. A Trading Site has two particular purposes under I-SEM:

The Trading Site:

- a) Facilitates dynamic Firm Access Quantity (FAQ) allocation for settlement
- b) Allows correct settlement of generation and supply for Autoproducers

Trading Sites – 2/3

Examples of how trading sites may be configured is provided below. We would recommend discussion on this with SEMO as part of the registration process. In the example below Trading Site TS_500222 has a Demand Side Unit and a Trading Site Supplier Unit, while Trading Site TS_400001 has two generation units (Gas and Wind) and an associated Supplier Unit that is provided by another Party.



Trading Sites – 3/3

The table below identifies which units require trading sites and which do not.



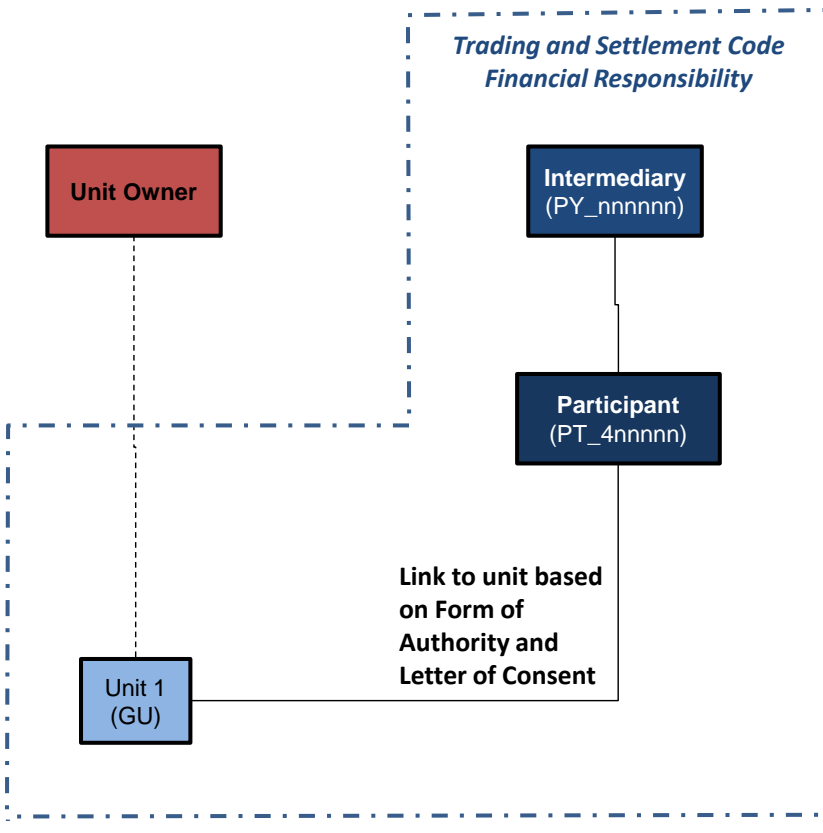
Must have Trading Site	Must Not have Trading Site
GU – Generator Unit	SU - Supplier Units (excluding TSSU)
DSU – Demand Side Unit	AU - Assetless Trader Unit
TSSU – Trading Site Supplier Unit	(Pumped/Battery) Storage Generators
TU - Trading Unit ^{#1}	Interconnectors

The below table identifies the type of Supplier Units that can be associated with a Trading Site.

TSSU Only	associated SU Only	associated SU or TSSU
DSU	Aggregated Generator Units	All other GUs

#1 – Only relevant for Autoproducers

Intermediaries



The SEM concept of an Intermediary has been maintained for the I-SEM arrangements.



Rather than registering and needing to participate under the TSC themselves, a Unit Owner can, based on specific criteria, nominate an Intermediary to become a Party to the Code and a Participant in respect of its unit.

The Unit Owner is required to complete a Form of Authority for the Intermediary and the Intermediary must obtain Regulatory Authority consent in respect of the arrangement.

The Intermediary will provide this Form of Authority and proof of Regulatory Authority consent to SEMO as part of the unit registration.

The diagram on the left shows the relationship between the unit owner and the company that takes financial responsibility for the unit in under the TSC.