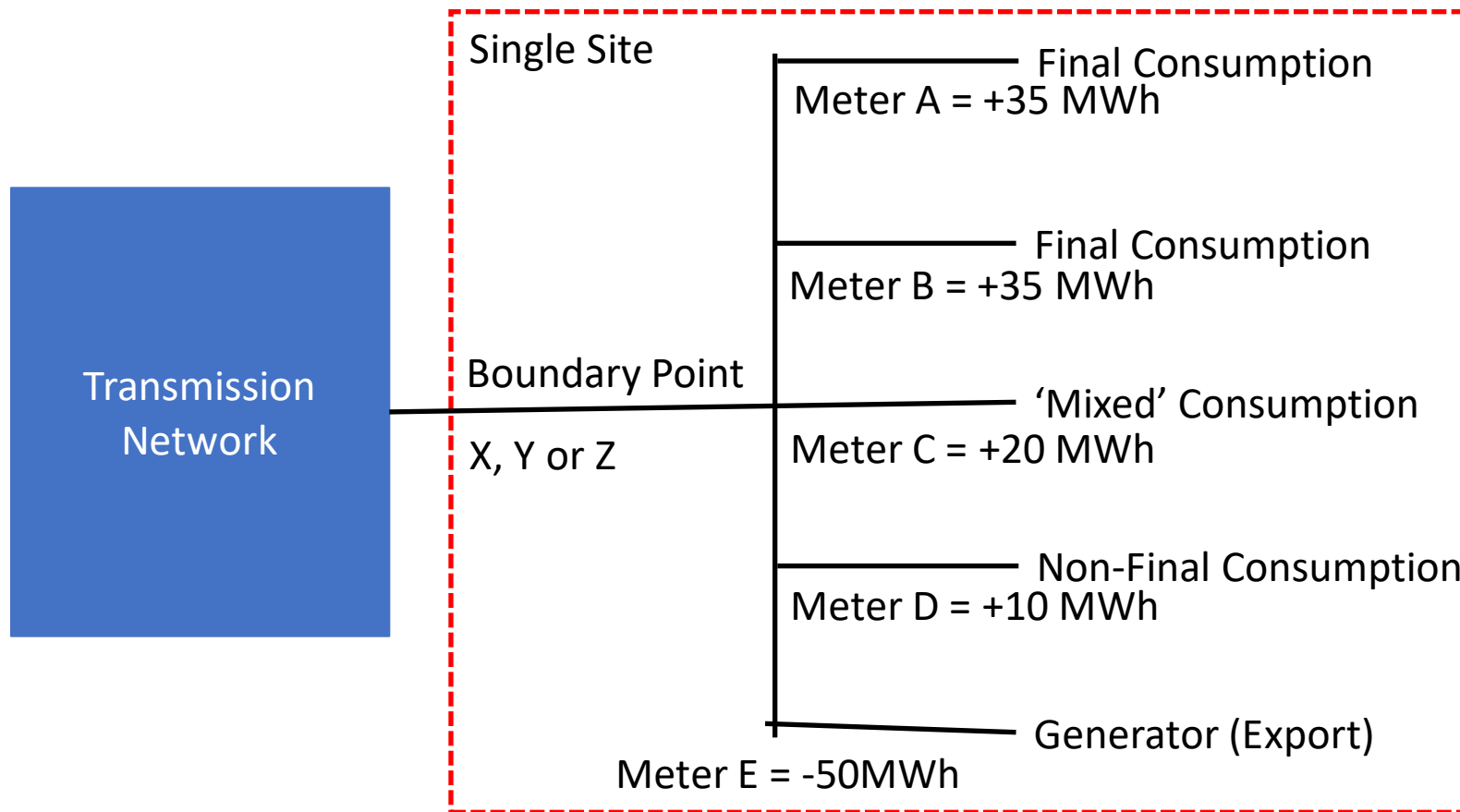


Notes across all examples

1. The following examples show simplified 'ideal' metering arrangements. This may not be needed or possible in all scenarios. Cumulative/actual metering as well as Difference metering solutions are within scope.
2. Values stated are annual MWh consumption figures recorded at the specific meter and so may not reflect actual load-flow in real time. Positive values represent demand consumption whilst negative values represent generation/export.
3. Any Generation TNUoS liability for each example is separately calculated and applied (i.e. additional to any Demand TNUoS liability)
4. Points X, Y and Z are all measured at the boundary point and reflect different ways of measuring flow/consumption at the boundary point. This assumes that the metering at the Boundary Point can separately report values X and Z;
 - X = Gross Consumption: total demand consumption at the site (i.e. Final and Non-Final Demand)
 - Y = Gross Final Demand Consumption: total Final Demand demand consumption at the site (i.e. removing any non-final demand). **This is what the proposal is trying to identify.**
 - Z = Net Demand: Observed position when both Gross Consumption and Export volumes are summated. In the following slides, this is shown in the omniscient views but not the sub examples (for clarity). This value is provided for completeness and not used in the TNUoS Demand Residual methodology.
5. Treatment of consumption measured at meter points A to D will not be affected by how that consumption is met (i.e. from onsite generation or supplied from the wider network)

Example 1 - Gross Consumption vs Gross Final Consumption vs Net Consumption



Notes

Example Band Boundaries

Band	Threshold
1	<100 MWh
2	=>100 MWh

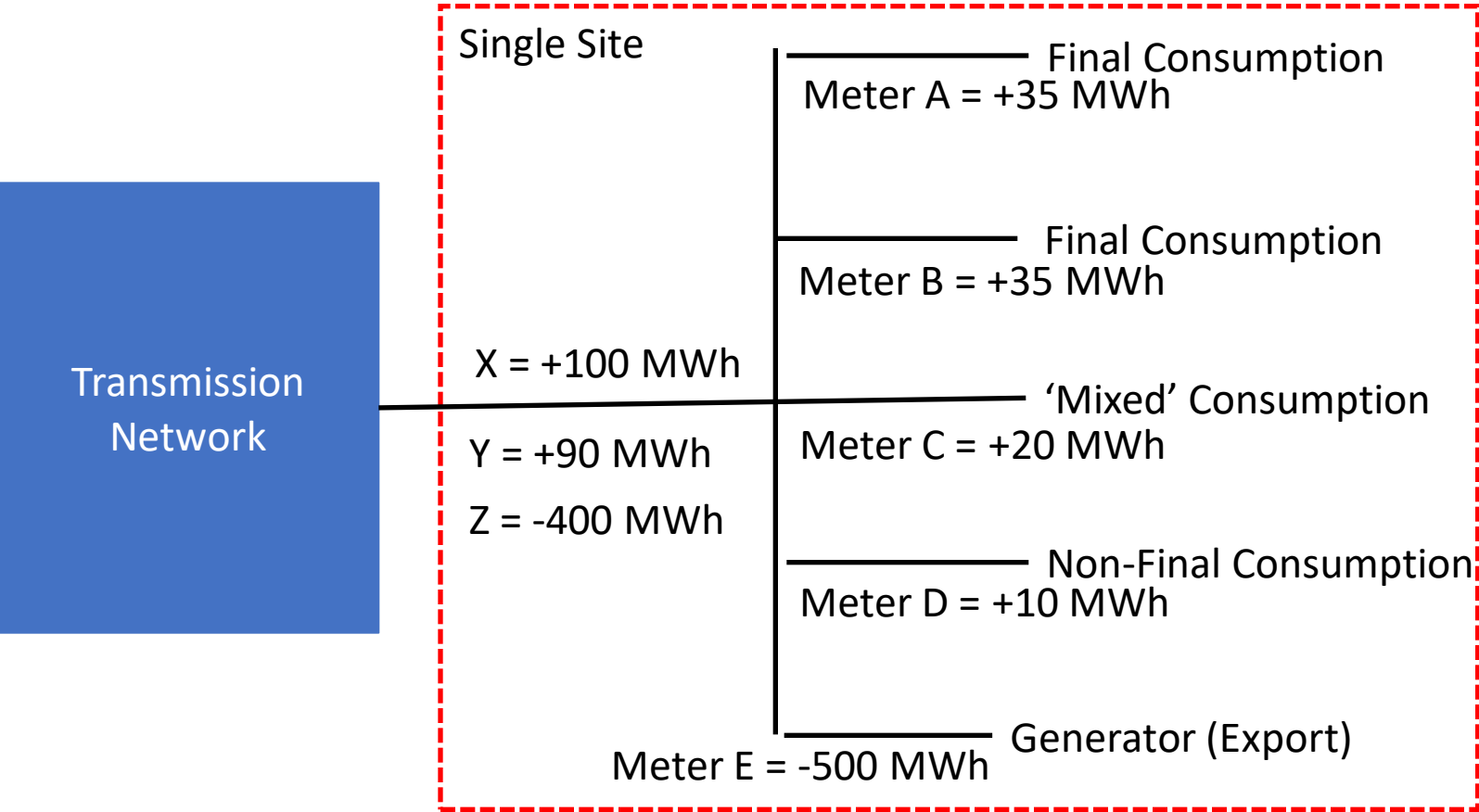
Positive values are Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

Observed at boundary point;

- X = Gross Consumption = +100 (A+B+C+D) = Band 2
- Y = Gross Final Demand Consumption = +90 = Band 1. This can be calculated as **A+B+C** or **X-D**
- Z = Net Demand = +50 (A+B+C+D+E) = Band 1

Example 2 - Generator with a small amount of Consumption.
(Omniscient view)



Notes

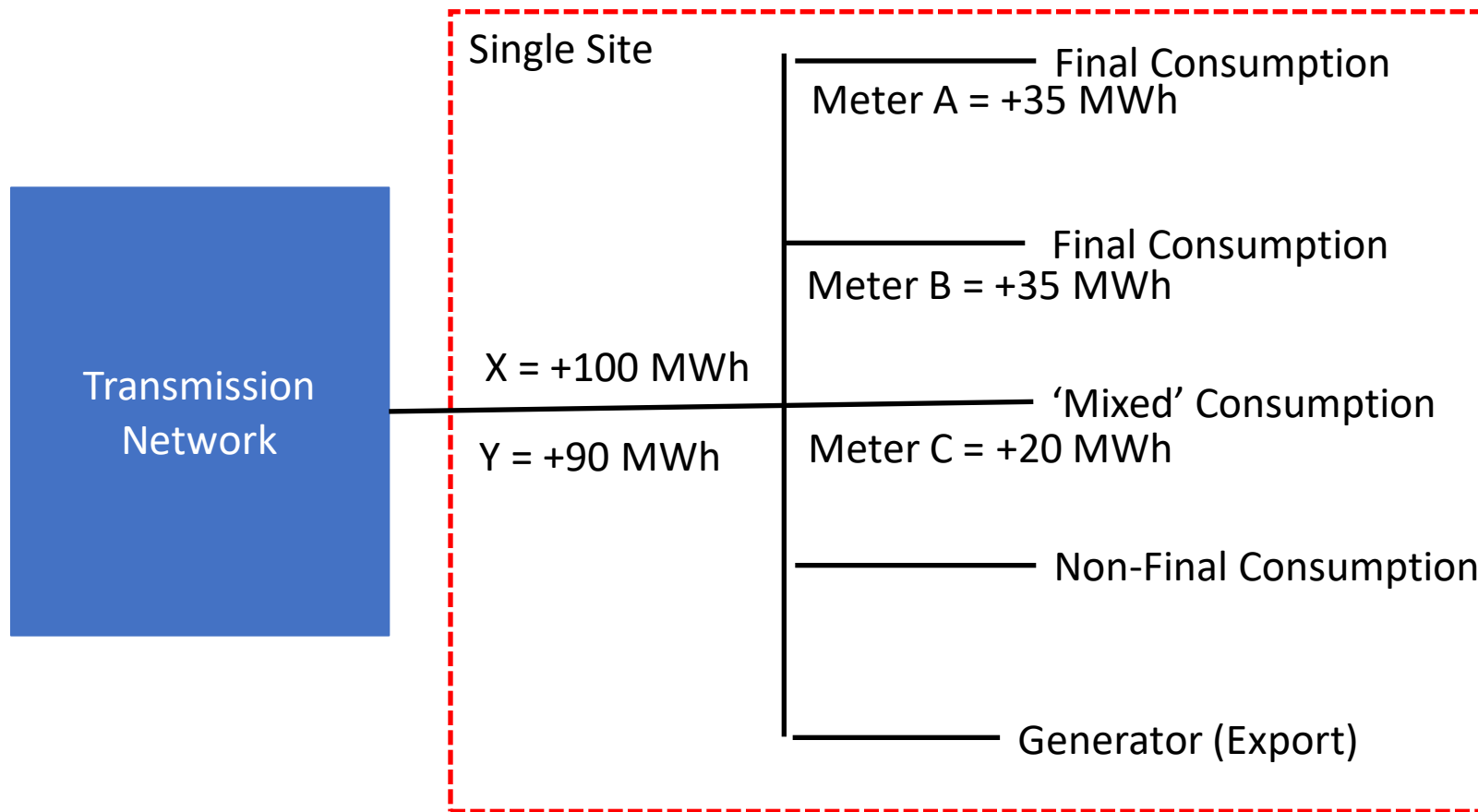
Example Band Boundaries

Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

Example 2a - Generator with a small amount of Consumption.



Notes

Example Band Boundaries

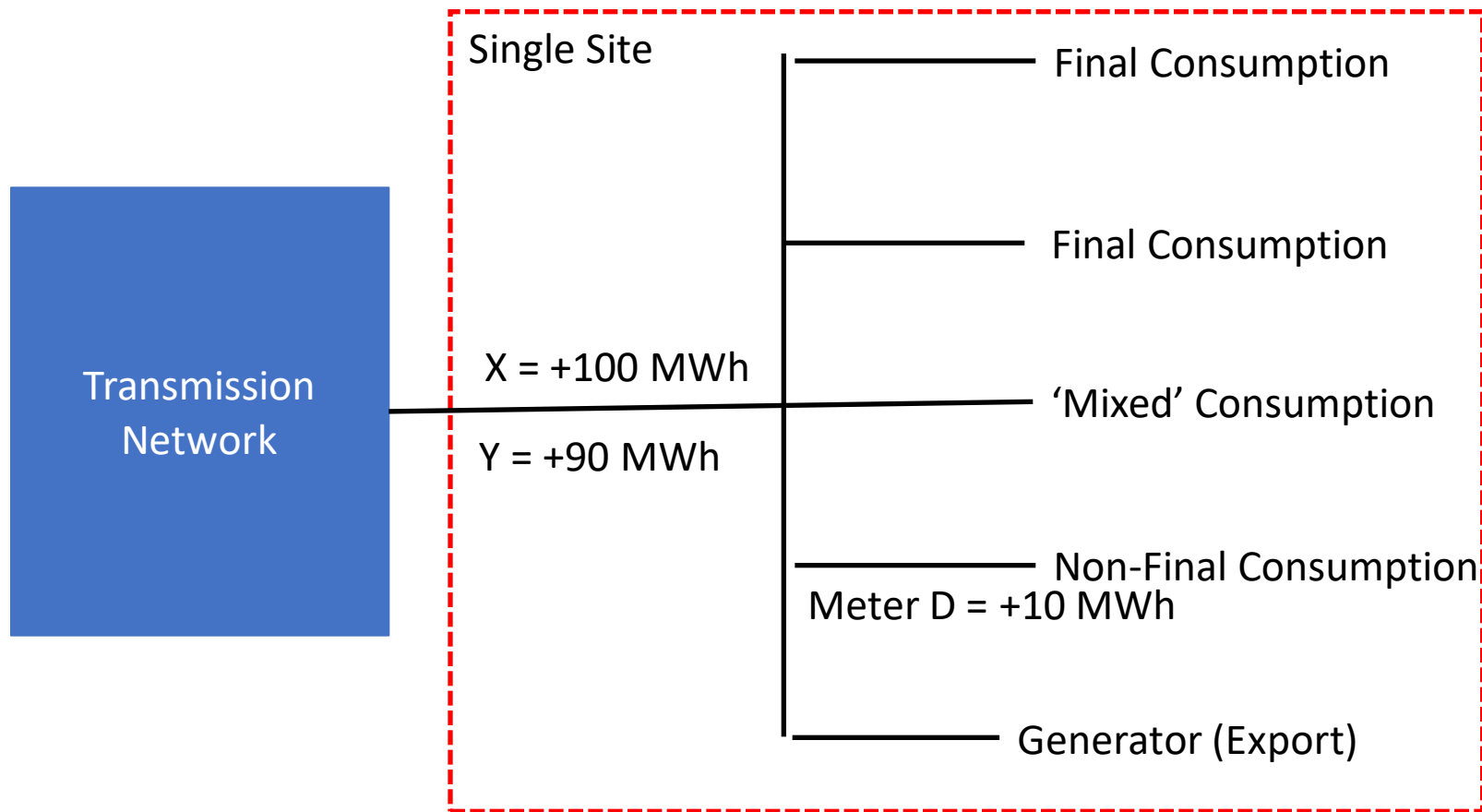
Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

- If no additional metering installed at points A, B and C, then Gross Consumption (X) used and allocated to band 2
- If additional metering is installed & declaration provided, then Gross Final Consumption (Y) is used and allocated to band 1. This can be calculated as **A+B+C**. Declaration would also need to confirm method of calculating

Example 2b - Generator with a small amount of Consumption



Notes

Example Band Boundaries

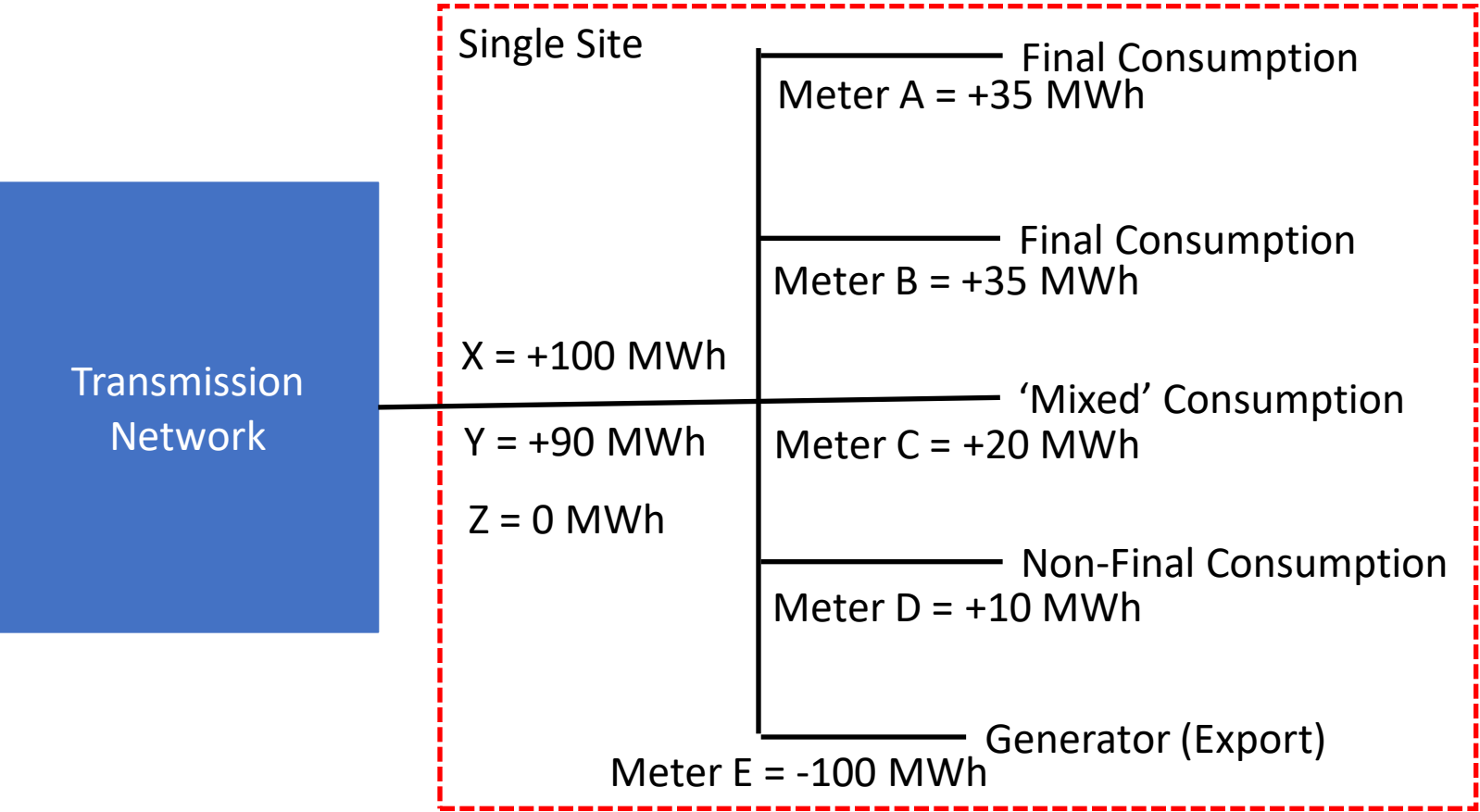
Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

- If no additional metering installed at point D, then Gross Consumption (X) used and allocated to band 2
- If additional metering is installed & declaration provided, then Gross Final Consumption (Y) is used and allocated to band 1. This can be calculated as $X - D$. Declaration would also need to confirm method of calculating

Example 3 - Generator with equal Consumption
(Omniscient view)



Notes

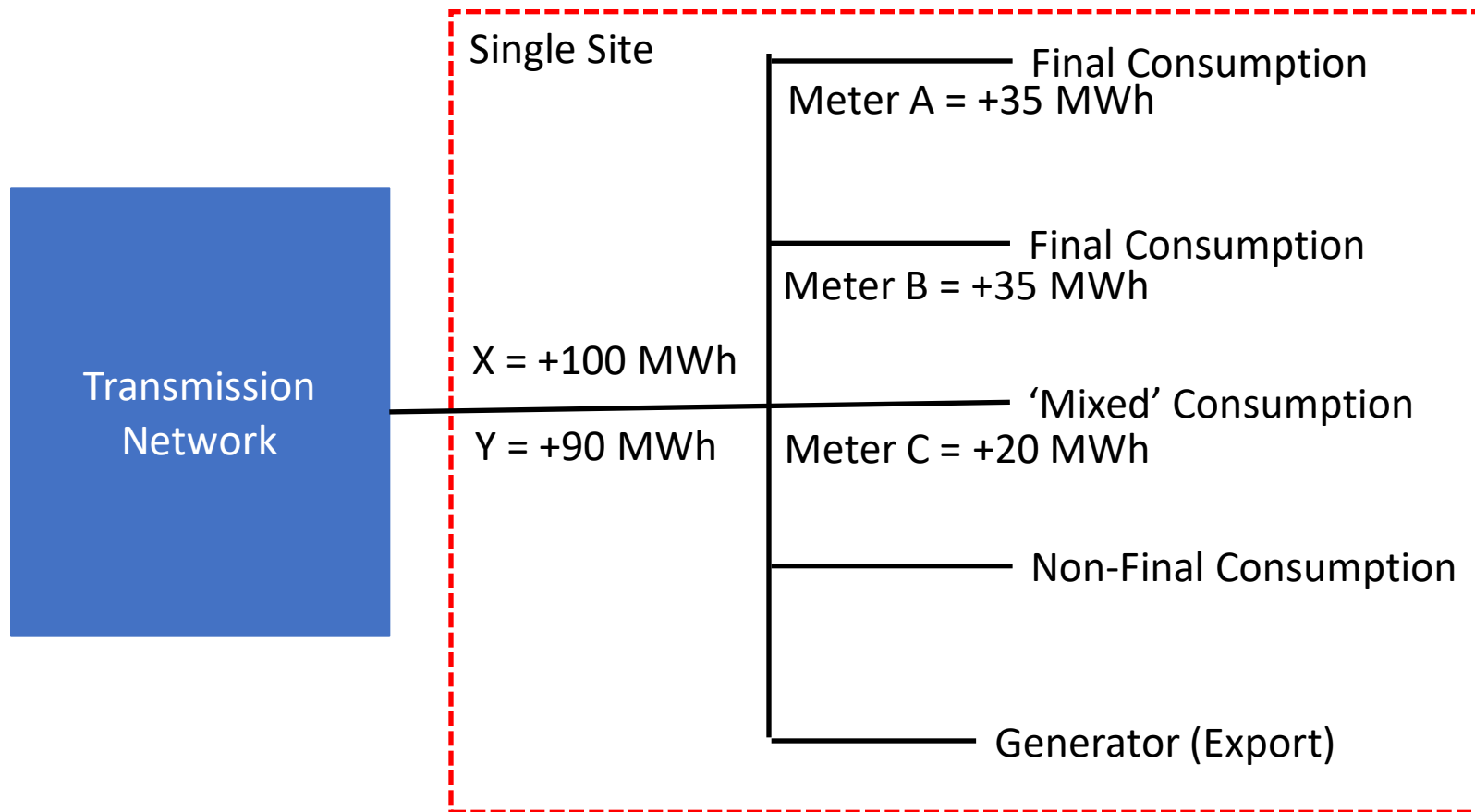
Example Band Boundaries

Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

Example 3a - Generator with equal Consumption



Notes

Example Band Boundaries

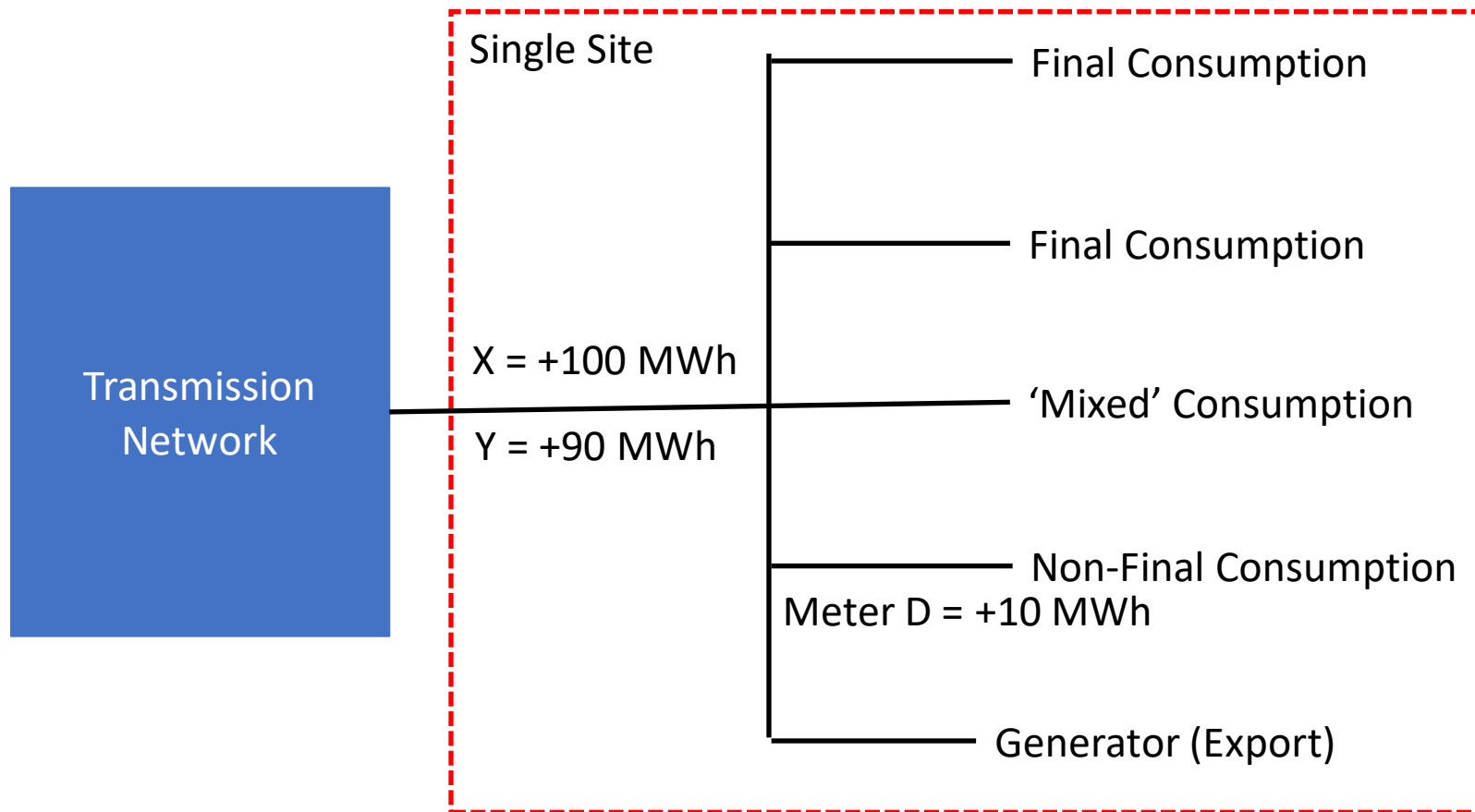
Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

- If no additional metering installed at points A, B and C, then Gross Consumption (X) used and allocated to band 2
- If additional metering is installed & declaration provided, then Gross Final Consumption (Y) is used and allocated to band 1. This can be calculated as **A+B+C**. Declaration would also need to confirm method of calculating

Example 3b - Generator with equal Consumption



Notes

Example Band Boundaries

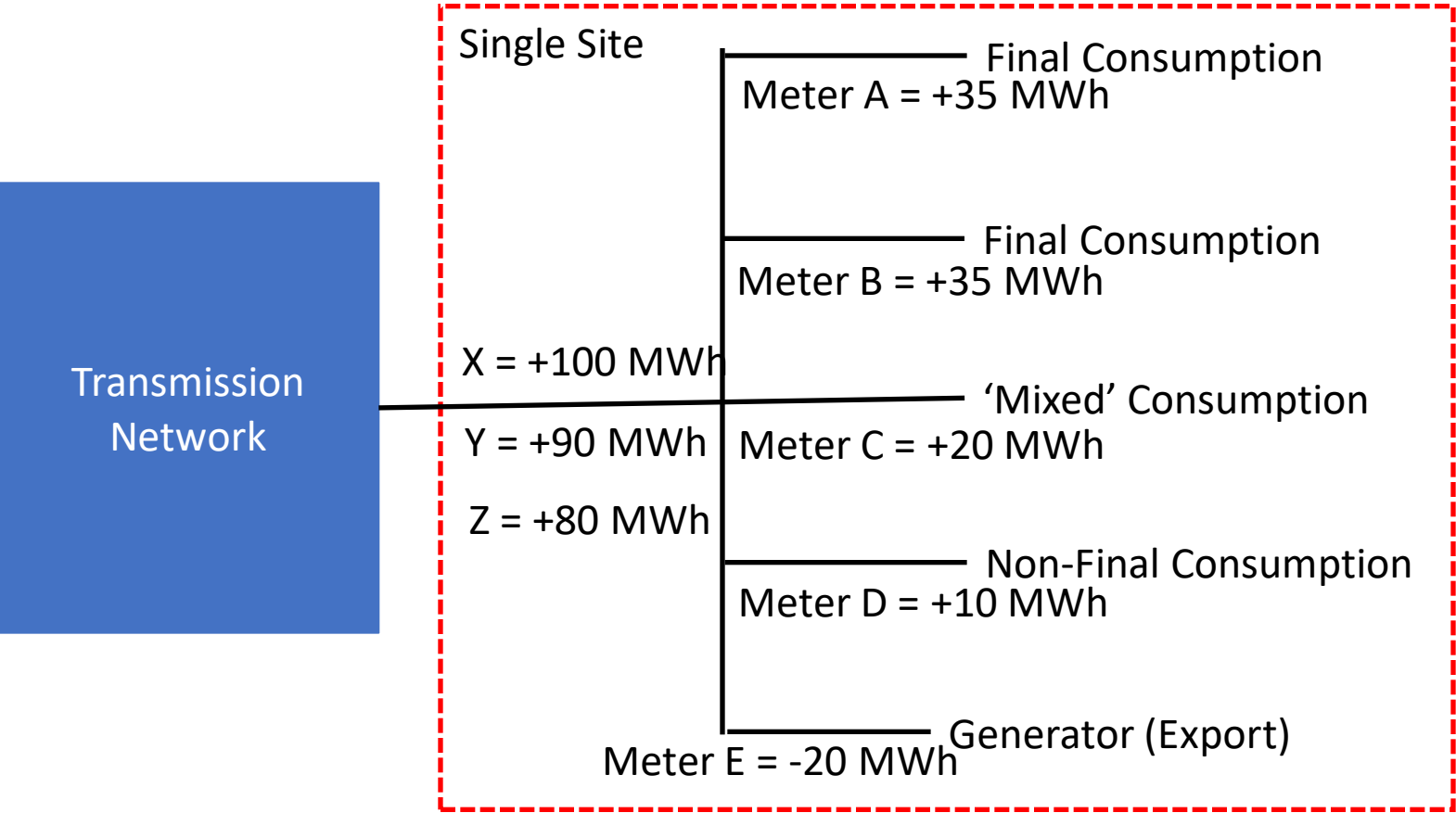
Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

- If no additional metering installed at point D, then Gross Consumption (X) used and allocated to band 2
- If additional metering is installed & declaration provided, then Gross Final Consumption (Y) is used and allocated to band 1. This can be calculated as $X - D$. Declaration would also need to confirm method of calculating

Example 4 - Consumption site with small amount of on-site generation.
(Omniscient view)



Notes

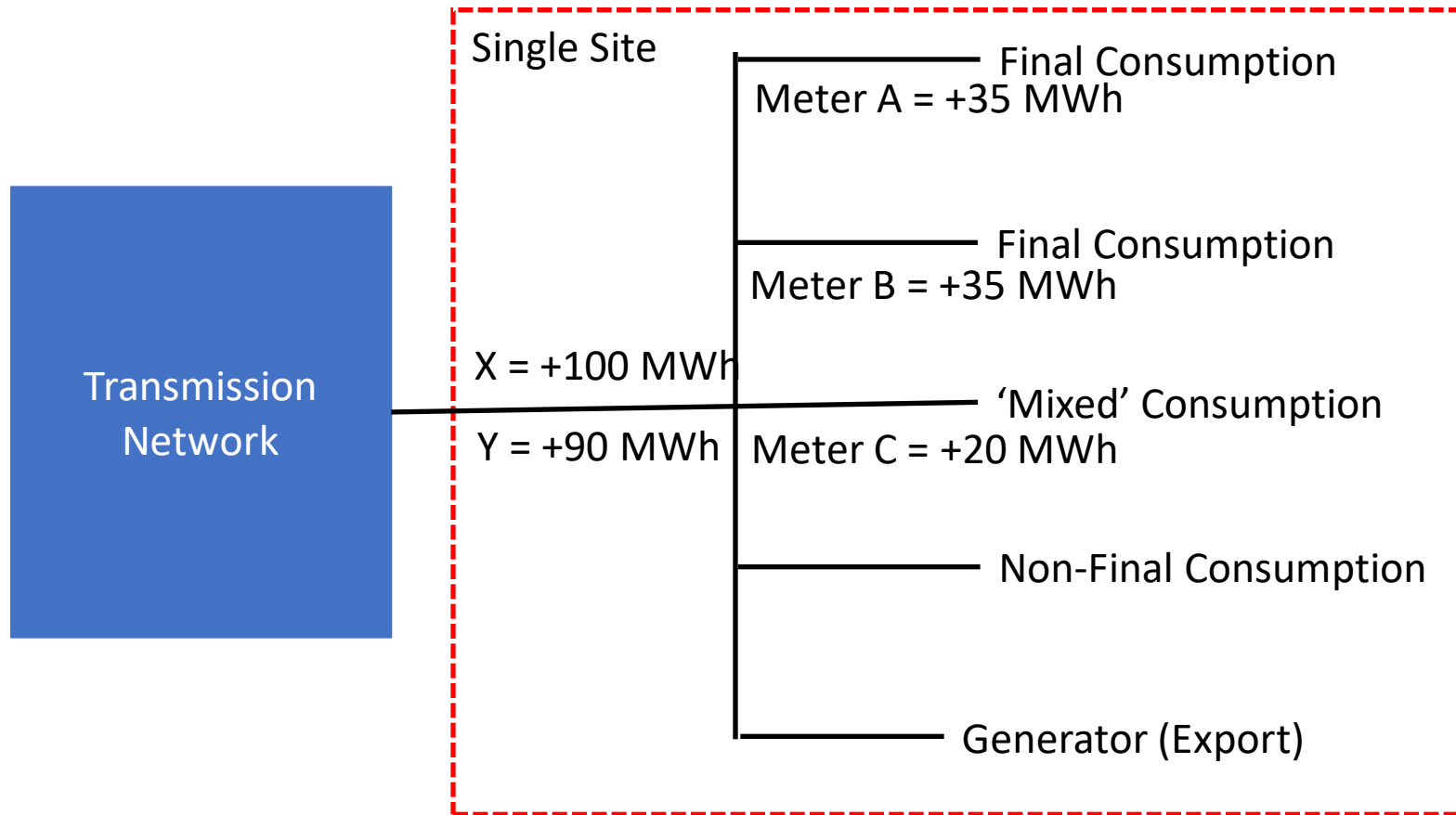
Example Band Boundaries

Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are Import/Consumption
Negative values are Export/Generation

——— User Assets and/or
Unlicensed
Network

Example 4a - Consumption site with small amount of on-site generation.



Notes

Example Band Boundaries

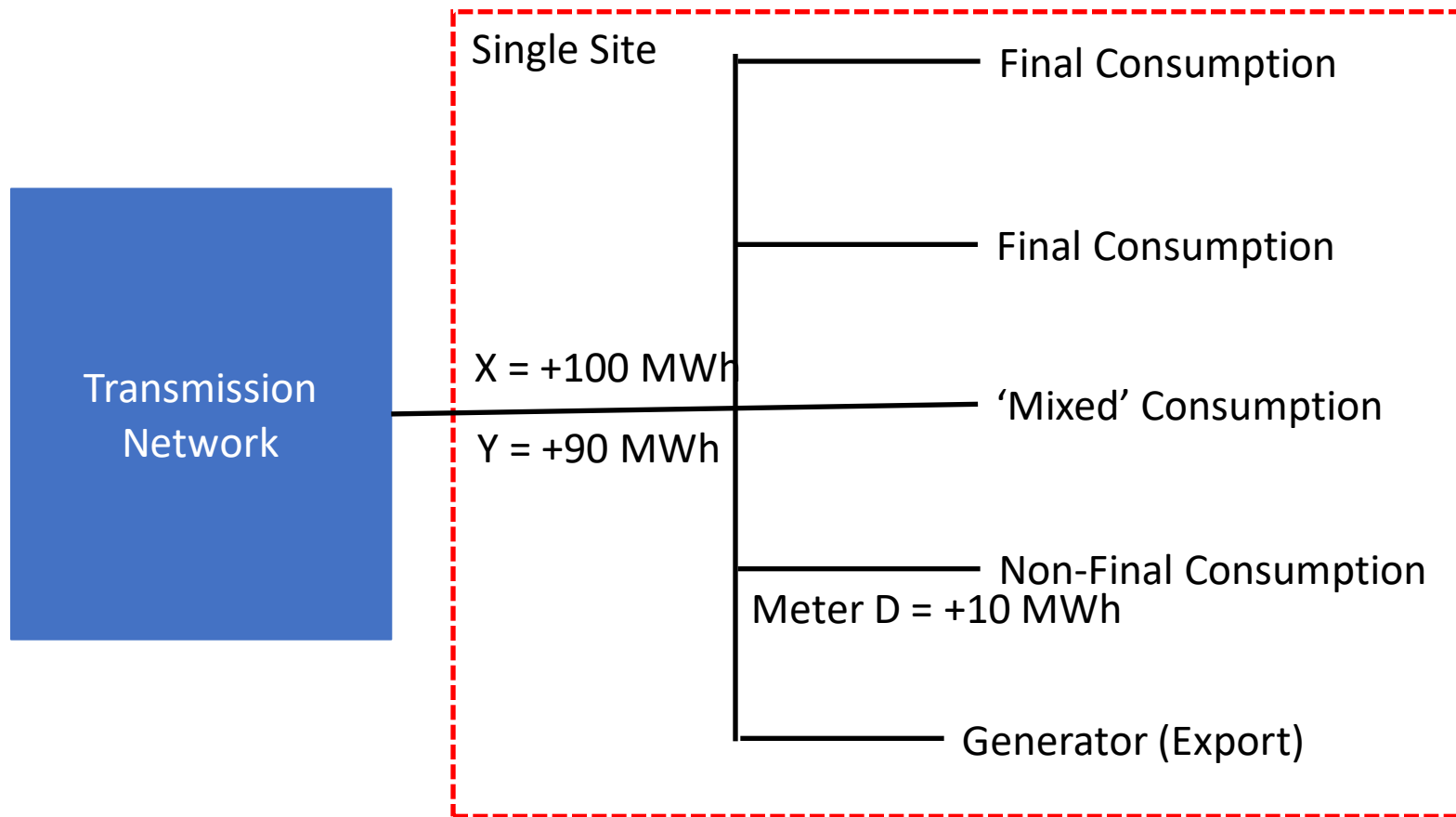
Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

- If no additional metering installed at points A, B and C, then Gross Consumption (X) is used and allocated to band 2
- If additional metering is installed & declaration provided, then Gross Final Consumption (Y) is used and allocated to band 1. This can be calculated as $A+B+C$. Declaration would also need to confirm method of calculating

Example 4b - Consumption site with small amount of on-site generation.



Notes

Example Band Boundaries

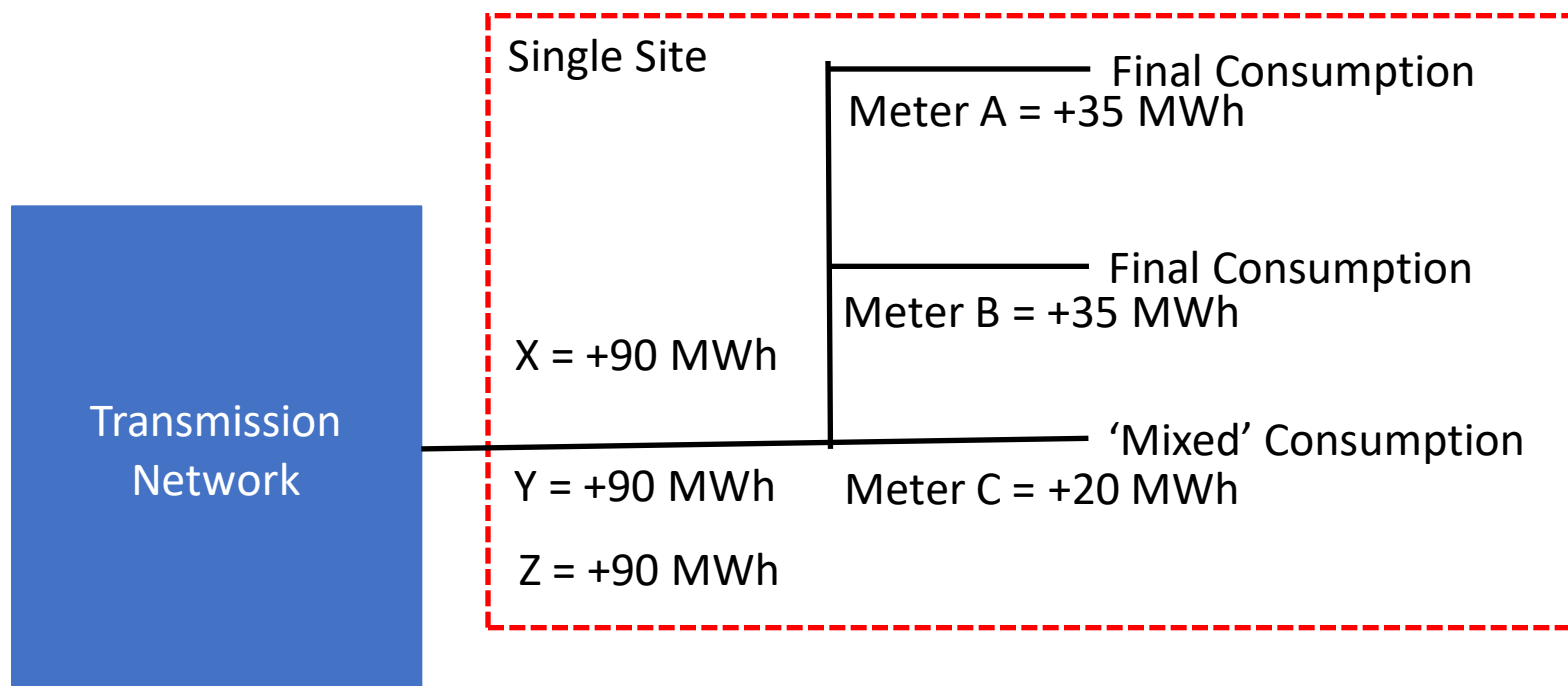
Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

- If no additional metering installed at point D, then Gross Consumption (X) used and allocated to band 2
- If additional metering is installed & declaration provided, then Gross Final Consumption (Y) is used and allocated to band 1. This can be calculated as $X - D$. Declaration would also need to confirm method of calculating

Example 5 - Consumption only site (Omniscient view)



Notes

Example Band Boundaries

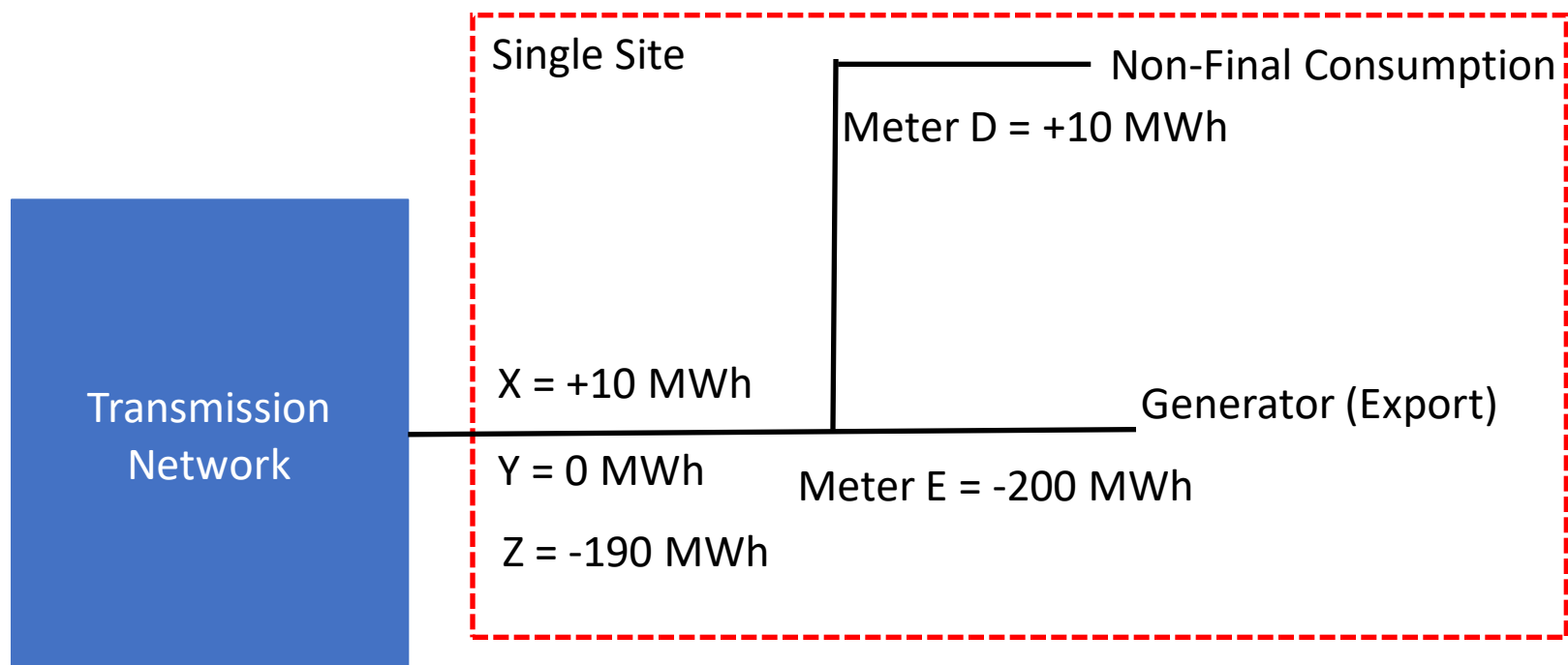
Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

- No generation/storage (and so no Non-Final Consumption), so Gross Consumption and Gross Final Consumption are the same.
- Provision of a declaration would not affect the volumes used.

Example 6 - Generation only site
(Omniscient view)



Notes

Example Band Boundaries

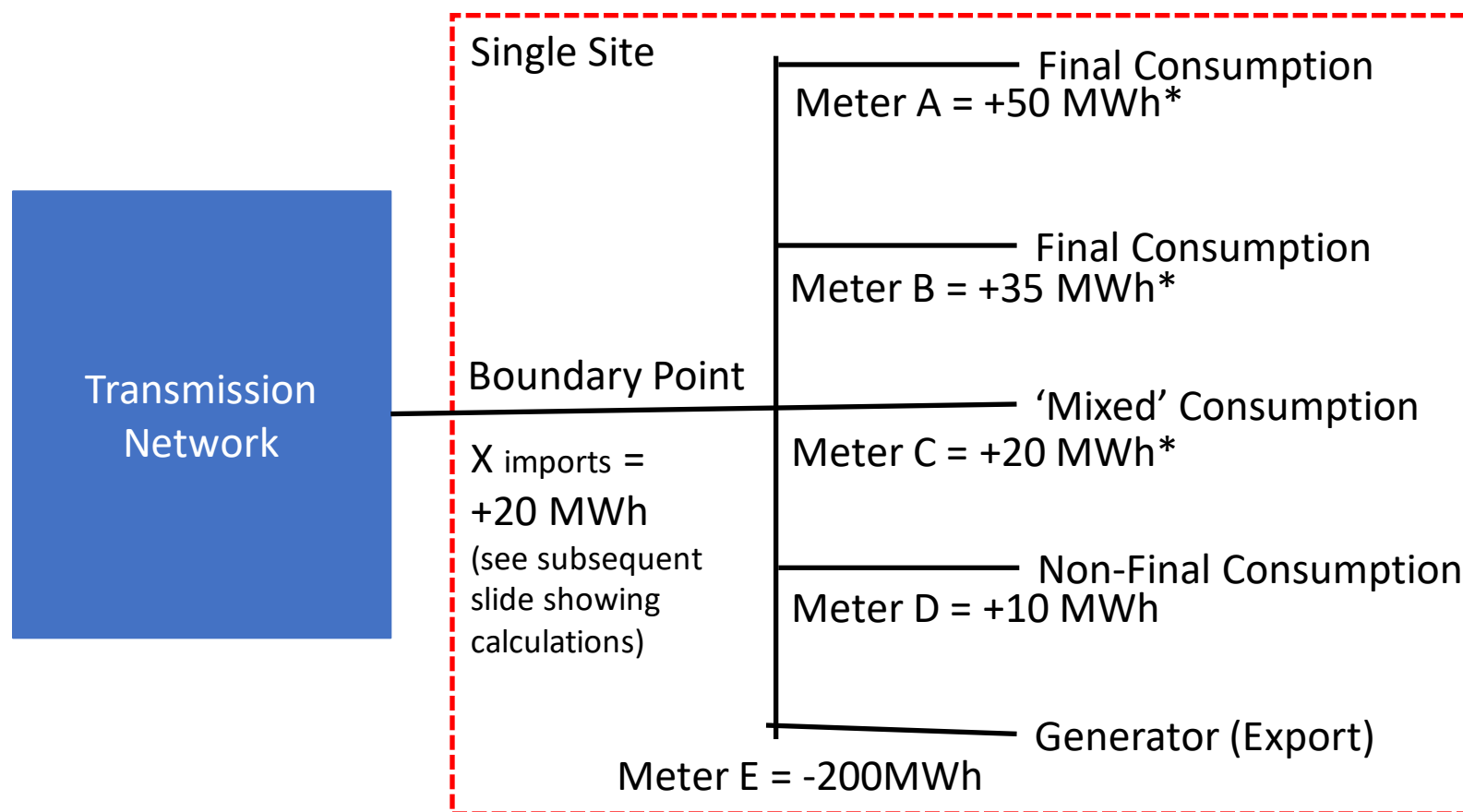
Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

- With no declaration provided, it is assumed that the Gross Consumption is Final Consumption and so allocated to band 1 based on X.
- With a declaration, confirmed no Final Consumption at Site and so would not face Consumption residual charges as methodology isn't applicable (i.e. allocated to a 'zero charge' band)

Example 7 - gross Final Demand Consumption, utilising onsite generation – two alternative metering configurations (omniscient view)



Notes

Example Band Boundaries

Band	Threshold
1	<100 MWh
2	=>100 MWh

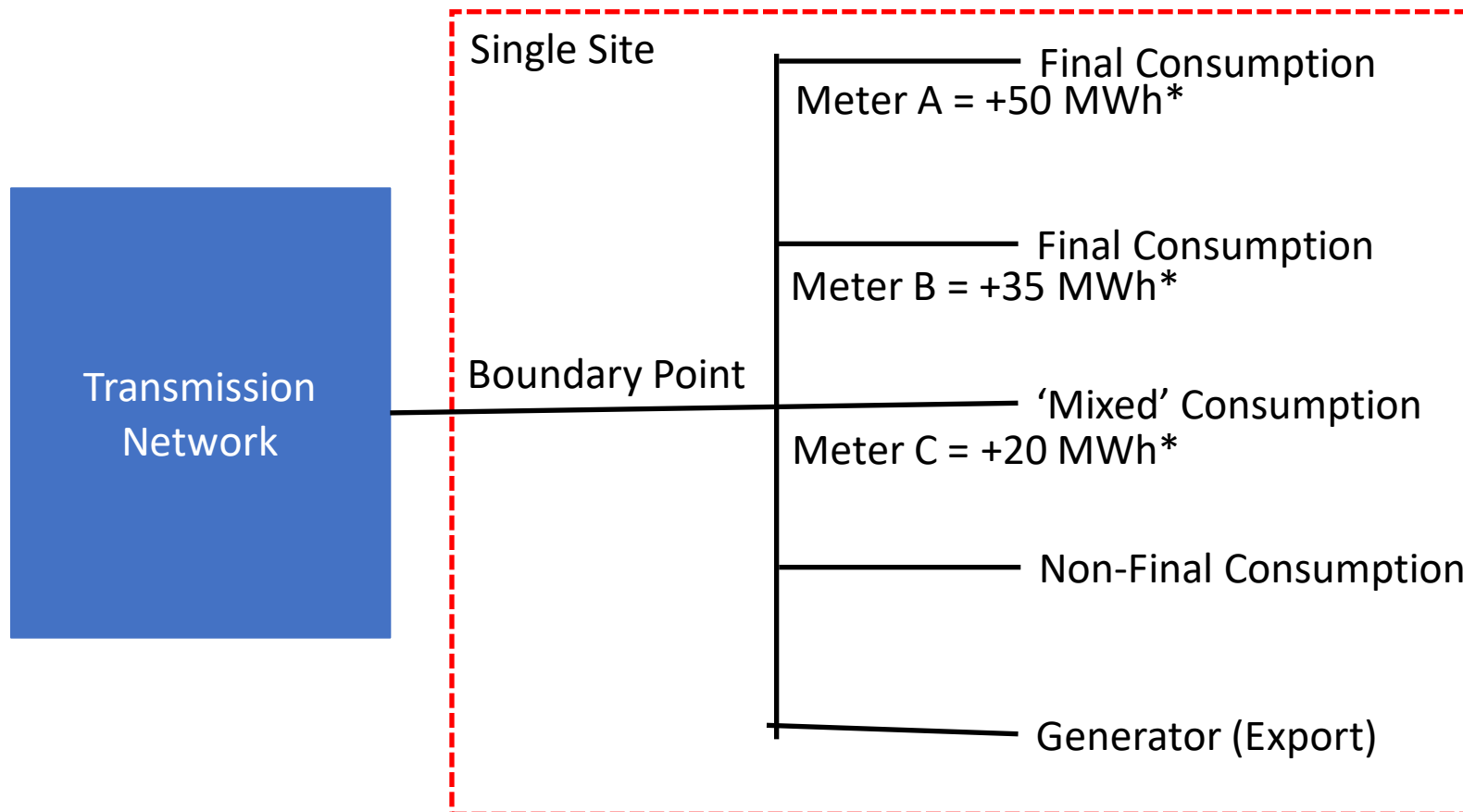
Positive values are Import/Consumption
Negative values are Export/Generation

— User Assets and/or Unlicensed Network

In example 7, onsite demand consumption is met by onsite generation. Examples 7a and 7b (next slides) show the two permitted alternative metering schemes which may yield different residual banding outcomes IF a declaration is to be submitted for the Single Site.

Additional example, part 2

Example 7a - gross Final Demand Consumption, utilising onsite generation,
With metering at points A, B and C



Notes

Example Band Boundaries

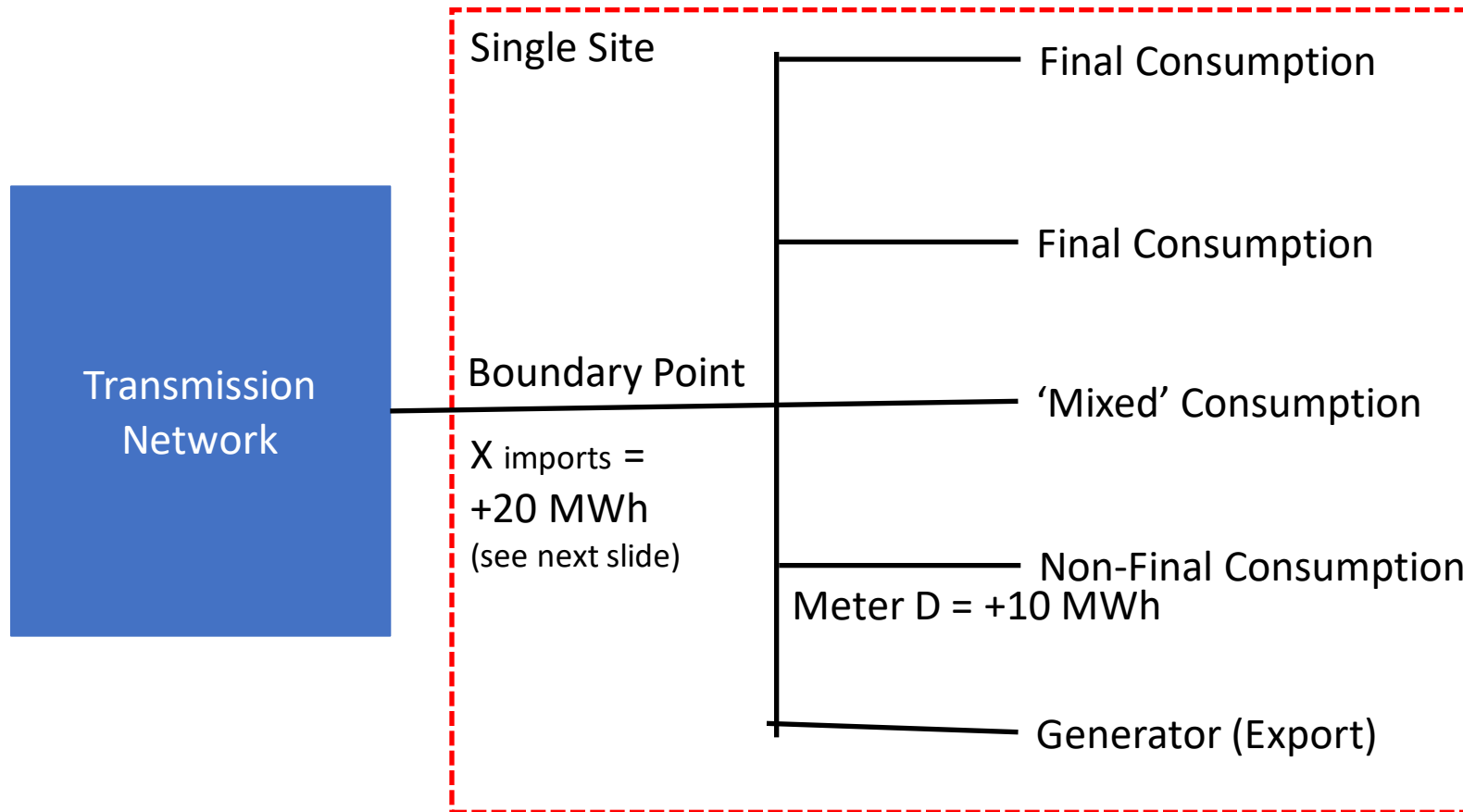
Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are
Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

Example 7a - If meters are in place at assets A, B and C, then $Y = \text{gross Final Demand Consumption} = A+B+C = 50+35+20 = 105 = \text{Band 2}$.

Example 7b - gross Final Demand Consumption, utilising onsite generation,
Using boundary meter X (import readings) and meter D



Notes

Example Band Boundaries

Band	Threshold
1	<100 MWh
2	=>100 MWh

Positive values are Import/Consumption
Negative values are Export/Generation

————— User Assets and/or
Unlicensed
Network

Example 7b - If no meters are in place at assets A, B and C, then $Y = X - D$ can be used (assuming there is a meter at D) but this would not be equivalent to $A + B + C$:

$X - D = 20 - 10 = 10 = \text{Band 1}$, where $X = 20$, i.e. the sum of the boundary meter half-hourly import readings – see calculation table on the next slide.

Calculations for example 7b

	Final Demand	Final Demand	Mixed Demand	Non Final Demand	Generation output		Site Boundary Meter	Annaulised Calculated Values	
t	A	B	C	D	E		SBM (X)	$Y=A_i+B_i+C_i$	$Y=X_i-D_i$
1	8	5	4	2	-40		-21		
2	8	5	4	2	-40		-21		
3	8	5	4	2	-40		-21		
4	8	5	4	2	-40		-21		
5	8	5	4	2	-40		-21		
6	2	2	0	0	0		4		
7	2	2	0	0	0		4		
8	2	2	0	0	0		4		
9	2	2	0	0	0		4		
10	2	2	0	0	0		4		
"Annualised" import meter sums	50	35	20	10	0	$X_i = \text{all imports}$	20		
"Annualised" export meter sums	0	0	0	0	-200	all exports	-105		
"Annualised" net					$Z = \text{annualised net position}$		-85		
Calculated Values for Y- Final demand consumption	50	35	20				20	105	10
								resid. band 2	resid. band 1

		Example 1 (Gross vs Net)	Example 2 (Gen w/ Dem)	Example 3 (Gen = Dem)	Example 4 (Dem w/ Gen)	Example 5 (Dem only)	Example 6 (Gen only)	Example 7 (onsite Gen meets onsite Dem)
Final Consumption	Meter A	+35 MWh	+35 MWh	+35 MWh	+35 MWh	+35 MWh	N/A	+50MWh
Final Consumption	Meter B	+35 MWh	+35 MWh	+35 MWh	+35 MWh	+35 MWh	N/A	+35MWh
Mixed Consumption	Meter C	+20 MWh	+20 MWh	+20 MWh	+20 MWh	+20 MWh	N/A	+20MWh
Non-Final Consumption	Meter D	+10 MWh	+10 MWh	+10 MWh	+10 MWh	N/A	+10 MWh	+10MWh
Export	Meter E	-50 MWh	-500 MWh	-100 MWh	-20 MWh	N/A	-200 MWh	-200MWh
No additional meters or declaration (Gross Consumption)	Volume X (A+B+C+D)	+100 MWh	+100 MWh	+100 MWh	+100 MWh	+90 MWh	+10 MWh	+115MWh
	Band	2	2	2	2	1	1	2
Additional meters & declaration (Gross Final Demand Consumption)	Volume Y (A+B+C) or (X-D)	+90 MWh	+90 MWh	+90 MWh	+90 MWh	+90 MWh	N/A	A+B+C = 105MWh or X-D = 10MWh
	Band	1	1	1	1	1	N/A	2 or 1
Net Consumption (for completeness)	Volume Z (A+B+C+D+E)	+50 MWh	-450 MWh	0 MWh	+80 MWh	+90 MWh	-190 MWh	-85MWh
	Band	1	1	1	1	1	N/A	n/a