

**Industry Briefing – REFCL Isolating Transformers
Q&A**

*Thank you for joining us at the AusNet Industry Briefing on **REFCL Isolating Transformers on New Estates**, held **24 March 2022**. We have prepared a list of the questions and answers based on what was asked on the day. We hope that these further clarify any questions that you have in relation to this topic.*

Q1. What is the definition/delineation between a large and small estate in AusNet Services view?

A. A small estate is classified as one that has 2 kiosks or less.

Q2. If you have multiple landowners in a network is there a cost sharing arrangement (i.e rebate and existing works charge? Or does the first cab off the rank pay?

A. The good news is that AusNet is financing the ISO TX costs but we will charge developers and other customers based on lots being developed. Developers won't see an extra cost as the charges are levied through reduced HV rebates payable in any one estate.

Q3. In regard to "timely planning" for ISO's, is this determined on a development-by-development case? Or will AusNet work with local Councils to minimize/nominate the number of ISO's to be installed when large areas of land are being rezoned for development, which would then dictate development order? For example, Wonthaggi North East Precinct Structure Plan that's currently being finalized and will introduce 5000 new homes in the coming years.

A. AusNet are still working through the higher-level planning details. Not knowing detailed staging within an estate and sequence of staging, its hard to nominate sites at precinct planning stage apart from making councils aware that isolating transformers will be required in any given precinct.

Q4. With the increased substation reserves, is the industry able to work with AusNet to convince councils to locate substations in council reserves?

A. AusNet will be very supportive of initiatives with councils to convey needs and to establish suitable ISO solutions. Some councils place a high value on their public open space. Also, the location of reserves may not line up with where we need to locate an isolating TX (usually close to the start of the new estate).

Q5. If AusNet are funding installation costs, who will be responsible for the actual purchase and installation of the ISO TX construction items?

A. At this point in time, AusNet will consider ISO TX installation as non-contestable works and will source and install ISO TX's using our own construction resource.

Q6. Do the Isolating Transformers need to open at the front to the street or can they be screened behind a fence or planting?

A. AusNet would prefer they remain open to the front for access and operating concerns. We also do not want to create a haven or area for anti-social activities.

Q7. Will a fire-proof barrier reduce the need for a house to have a fire rated wall?

A. AusNet will install all ISO kiosks with a suitable fireproof barrier on the title boundary. The need for further fire rating by homeowners will be dependent on their building surveyor advice, window locations etc., however this is not anticipated as necessary. The plan is to future proof the installation from the risk of landowner non-compliance to a caveat.

Q8. Will ISO's be required on REFCL Tie Feeders?

A. Yes.

Q9. How do AusNet Services propose to deal with partially developed estates that have permits and endorsed plans and now need an isolating transformer?

A. We will actively work with councils and developers to get council permits changed. We will explore options to reduce feeder capacitance outside the estate to avoid an ISO TX if we can. If the feeder has reached its capacitance limit for REFCL, we must install an ISO TX somewhere to take way the impact of additional HV cable connecting to the network.

Q10. How will it work when an Option 2 contractor has to install a new HV UG cable on a new pole, or the pole requires replacement for the installation of the ISO TX? Will the contractor just trifurcate/terminate the cable on the pole and walk away or if there is no pole, just bury the cable for AusNet to install at a later date?

A. There are a number of options being considered. The option 2 contractor will, in the majority of cases, be installing HV cable and a kiosk before the ISO TX is in place. The contractor could stop the HV cable short of the ISO TX position and AusNet install the missing cable section when the ISO TX is installed. Alternatively, the option 2 contractor may be asked to install HV conduit from ISO TX position to kiosk and AusNet will install the HV cable when the ISOP TX is installed. No single solution has been agreed on. It will be agreed on a case by case basis.

Q11. AusNet mentioned that every domestic customer in a REFCL area pays an amount, assume this forms part of their tariff? Does this apply to end-customers in a development where the developer has "paid/contributed"?

A. There are no tariff differences for customers connected in REFCL areas. Contributions are only collected from new infrastructure connections works and will be done by reducing future revenue and applying this to the cost calculation model. This has the impact of reducing AusNet's overall contribution to capital works. For URD estates, the way this will be seen by developers is a reduction in HV rebate on average by 18%. ie They will be contributing to the ISO TX costs, but not asked to pay up front. They pay by not getting back the rebate they would in non REFCL areas.

Q12. How much to these ISO transformers cost?

A. Pole mounted 1MVA units are in the order of \$250k. Ground mounted units are in the order of \$750k.

Q13. To assist our clients (developers/principal consultants) in budgeting. Can we be provided HV rebate schedule for REFCL/Non-REFCL area?

A. A simple application of a 18.5% reduced HV reimbursement in REFCL areas should be sufficient for budgeting purposes.

Q14. Has there been any consideration given to installing the ISO's as an Indoor Type? This would meet all fire rated issues and may be more of an aesthetic option for Developers.

A. There has been no consideration given to this to date and there is currently no plan to establish a standard. However, AusNet is willing to further explore this option if a developer wants to consider this specifically for a particular estate.

Q15. Often purchasers don't want to live near a kiosk for fear of health reasons and possible issues? Other than potential for fire have there been any studies done to ensure there are no potential health issues for residents living near these ISO transformers?

A. There are no specific studies in relation to ISO TX's. But they operate at 22kV which is the same voltage we use for all existing kiosks in housing estates. Health implications would be similar for any purchaser choosing to buy a lot with a kiosk substation on it.

Q16. Have you considered air type or epoxy insulated ISO transformers rather than oil?

A. No. Its unlikely the economics would make this viable.

Q17. Have any ISO TX's been pre-emptively ordered due to the high pick-up foreseen? This would reduce the lead times and mitigate any delays to getting customers/developments on supply. This would mean developers can continue to support the construction industry and moving customers into their homes.

A. AusNet is working with the manufacturer to finalise the finer details of the new ISO arrangement which is expected to go into production soon. There is an off the shelf option from another manufacturer with different specifications that AusNet is considering acquiring as an interim option, however lead times for these are 32-40 weeks. The intent is to have a minimum number of ISO's in stock ready to deploy once the supply chain and processes become more bedded down. Long term they should have a similar lead time as a kiosk.

Q18. Does MCR apply to Commercial/Industrial also?

A. Yes, it applies to all new connection categories.

Q19. What is the lead time for ground located isolator installation? We have developments that cannot proceed because they need a ground-based isolator.

A. At present, as they are new units not on contract before. Leads times are long. Ranging between 40 and 50 weeks. Leads times are also large due to current Covid constraints and overall material supply issues for our suppliers to construct these units. Early application and planning is critical.

Q20. Can we install temp supplies through a temp HV cabinet on the ISO slab to gain SoC. Then AusNet can replace with ISO TX when it's delivered to avoid delays to developers.

A. No. If the feeder has reached a capacitance limit, then an ISO TX must be installed before any new HV cable is connected to the network. If the estate stage has strong LV connections to other stages within the estate, then SOC will be considered if it is known the ISO TX will be installed pre summer peak load. Alternatively, we are exploring the option of placing a 173 agreement on lots to be sold so purchasers are aware of the lead times before permanent power will be available. i.e. permanent power won't be available until the ISO TX is installed. Early application and planning are critical.

Q21. Are LC cables required in the effected (estates with ISO's) areas?

A. No.

Q22. It seems that there is a 32-40 week lead time for material. And how much longer for installation and consenting for SOC to be issued?

A. AusNet works with the industry at present to issue early SOC at pre-commission audit pass. This is on the basis permanent power is typically available, on average, about 6 weeks later. This normally lines up with title release and meets expectations of fast-moving purchasers. AusNet cannot find itself in a position where SOC gets issued, houses are being constructed and reach lock up stage yet permanent power is not available. We will work with developers on options to issue SOC in a timely manner (early) but this may require a 173 agreement communicating to potential purchasers the lead times before permanent power will be available.

Q23. Will sizing of the ground mount type of Isolator factor into future subdivisions in the area outside our [developers] direct project? At the same time, does this mean more HV Switching Stations scattered around?

A. In addition to getting the development industry on board to install ISO TX's inside estates, AusNet is also undertaking network reviews on capacitance limits outside estate areas and is installing ISO TX's on the network outside estates already. This practise will continue as we grow our network while dealing with the constraints imposed by the Government mandated REFCL systems. The overall impact is more kiosk style units on the network.

Q24. How regularly will the Capacitance Feeder Calculator spreadsheet be updated with current data?

A. As REFCL units are commissioned, and network capacitance limits identified, the spreadsheet is updated. It's a live document so designers should always use the latest version from ECM rather than a local copy downloaded months ago and stored locally on their PC. As a minimum, the document is updated annually.

Q25. Has the impact on NBN infrastructure been determined with the ISO's? Currently NBN pits can't be installed within 15m of normal substations.

A. No change to EPR zones. Maximum HV fault level remains unchanged at any ISO TX position and could be up to 13.1 KV depending on distance from a zone substation.

Q26. Does the kiosk solution take into account the level of noise radiating from 1,2&3MVA?? Do you know what the noise levels are?

A. Yes, current specified noise level limits are - 2MVA – 62 DB, 3MVA – 63DB, 5MVA 65DB.

Q27. Will Ausnet know at the time they approve drawings, whether an isolating transformer is required

A. Yes. It will be a key question that designers must ask AusNet before they proceed with any detailed design. Early application and planning are critical.
