



Macaulay Metals – Electrical Infrastructure Recycling Projects

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Summary

Electrical Generation, Transmission and Distribution, Recycling Infrastructure Projects Summary

The table below is a snapshot of the many Electrical infrastructure projects Macaulay Metals.

Date	Location	Description of Work Undertaken
April - June 2025	Invercargill Substation and Manapouri Power Station.	Scrapping of 2 x 108 Tonne (Dry) Wilson Transformers.
October 2024	Evans Bay Substation, Wellington	Removal and recycling of 2 x 41 Tonne Savigliano Transformers from the Evans Bay Substation.
June 2024	Wilton Substation, Wellington	Removal of 3 24.5 tonne CGE Transformers
June 2024	Ventia Transformer workshop, Bunnythorpe,	Collection of a 56 tonne failed Hawker Siddley Transformer.
October 2023- November 2023	Meridian – Westwind Farm. Wellington.	Onsite deconstruction of the failed T2 Transformer – 90 tonne
April 2023 - July 2023	Taranaki CST-NPL-A and NPL-SFD-A Near Port Taranaki.	Transmission lines rerouting and upgrade recycling services. Removal and recycling of over 200 tonne of Zebra ACSR, insulators and tower steel.
October 2022	Roxburgh Power Station	Removal of 3 General Electric 31 tonne Single phase transformers.
Jun 2022 - 2024	Karapiro Power Station	Karapiro HPP Rehabilitation Works. Andritz are replacing three hydro generators at the power station. Macaulay Metals has been contracted to manage the transportation and the processing for scrap metal of each of the 400 tonne units.
Sep-Oct 2022	OTA-WKM Upgrade	Transmission lines renewals and upgrade recycling services. Removal and recycling of approximately 40 tonne of ACSR.
Oct 2022	Ventia Transformer Workshop - Bunnythorpe	Clearance of multiple Transformers, up to 23 tonne, transformer tanks, transformer coils and a large quantity of redundant electrical plant.
Sep 2022	Fernhill Substation	Loading, transport, dismantling and processing for scrap of 3 x 24 tonne Savigliano single phase transformers.
July 2021 to Mar 2022	Clyde Power Station	Loading, transport, dismantling and processing for scrap of 2 x 106 tonne Tyree Power transformers for Contact Energy. Collected from the Clyde Power Station crane hall.
January 2021 to June 2022.	Roxburgh to Livingston	Transmission lines renewals and upgrade recycling services. Removal and recycling of approximately 550 tonne of ACSR (Goat). Salvage



		and recycling of cable drums, insulator glass, plastics and timber crates.
January to August 2020	New Plymouth Power Station - Substations	Dismantling and removal of the 33kV, 110kV and 220kV Substations and the disposal of 4 x 105 tonne Parsons Peebles Transformers and 2 x 63 tonne Lombarde transformers.
September 2018	Rotorua - Owhata Substation	Dismantling and removal of 3 x ASEA 20 tonne Transformers. Stage 1 of a 3 stage project with 7 more ASEA's to be removed in 2019
July 2018	Kawerau – Tasman Site	Demolition and disposal of Todd Energies TG1 Isopentane Geothermal power generation plant.
November 2017 to May 2018	Manapouri Power Station	Removal and disposal of 5 120 Savigliano tonne transformers from the underground Power Station, including barging across lake Manapouri.
May-June 2018	Christchurch – Islington Transformers	Removal and disposal of 3 Ferranti 35 tonne transformers.
May 2018	Centre Port, Wellington	Removal of 750 tonnes of Fibre Optic Cable recovered from Cook Strait.
October 2017	Christchurch – Bromley Substation	Removal and disposal of 3 x 60 tonne Savigliano 01 x 60 tonne GE transformers from the Bromley Substation.
February 2017	Christchurch – Bromley Substation	Removal and disposal of 3 x 60 tonne GE transformers from the Bromley Substation.
2016 - 2020	Whakamaru Power Station	Removal of 50 tonne Stator ¼ segments and associated generation plant from the Whakamaru Power Station.
2017 - 2020	Aratitia Power Station	Removal of 50 tonne Stator ¼ segments and associated generation plant from the Aratitia Power Station.
May-June 2017	West Wind Farm - Teriwhiti Station	Removal of redundant plant and shipping containers from remote locations at Meridians West Wind Farm
July 2017	Tangiwai Substation	Removal and dismantling of substation switch room and in trench cabling for Broadspectrum
July 2016 – December 2017	Horowhenua Area, Wellington	Removal of Copper Overhead 140 tonnes, ACSR 21 tonnes, Steel 6 tonnes and various wooden and concrete poles for recycling.
January – 2016 February 2016	Alpine Energy Yard, Timaru	Dismantling and disposal of 11 Transformers - 4 Tyree Power, 2 ECC and 2 Standard Waygood
November 2015	Wellington	Collection of ACSR "Goat"conductor – RQ2015-10114 – BPE-HAY – 200 tonnes
May 2015	Tarukenga Substation, Rotorua	Removal of the T2 Transformer Bank – 3 x 60 tonne Savigliano Transformers
February 2015 – May 2015	National Park and Ohakune Sub Station	Switch yard demolition and removal of 4 Transformers from National Park.
March 2015	Paraparaumu Substation	Removal of two 30 tonne Hawker Siddeley Power Transformers from the Paraparaumu Switchyard.
February – March 2015	Paraparaumu Substation	Demolition of the 33kV switchyard at the Paraparaumu Substation for Electrix.



January 2015 – March 2015	Paekakariki to Pauatahanui	Removal of 48 Transmission Towers from Transmission Gully for Electrix and recovery of the ACSR conductor.
December 2014 – March 2015	Wairaki to Whakamaru	Felling, disposal and foundation removal of 90 transmission towers and recovery of the ACSR conductor.
December 2014	Whakatu Substation	Dismantling of the 33kV gantry structure and associated equipment.
November 2014	Haywards Substation	Removal of 4 76 tonne ASEA transformers and associated structures.
November 2014	Kaitawa Power Station	Removal of 3 34 tonne Metropolitan Vickers transformers
September 2014	Ferhill Substation, Hawkes Bay	Removal of 393 tonnes of redundant tower steel.
May 2014	Stratford Substation	Removal of 4 Asea 24 tonne transformers
April 2014	Redclyffe Substation	Removal of 4 24 tonne and 3 31 tonne transformers, Dismantling of the 33kV switch yard.
March 2014	Haywards Substation	Removal of 4 67 tonne ASEA transformers and associated structures.
March 2014	Roxburgh Power Station	Removal of 3 Ferranti transformers weighing 45 tonnes each
March 2014	Transpowers Otahuhu Warehouse	Collection / Recovery of 430 tonnes of Redundant Tower Steel.
February 2014-April 2015	Alexandra – Overhead ACSR Line Replacement	Collection of ACSR – ROX-CDY – 287.658 tonnes of ACSR collected from Alexandra.
January 2014	Stratford Substation	Removal of 3 Asea 24 tonne transformers
November – December 2013	Former New Plymouth Power Station – Port Taranaki	Disposal on site of 5 Parsons Peebles 140 tonne transformers and 4 17 Tonne Transformers
November 2013	Stoke Substation - Nelson	Removal of 4 Di Legnano 30 tonne transformers. Demolition and removal of the Stoke Substation 33kV yard – Subcontract to ABB.
August 2013	Tarukenga Substation, Rotorua	Removal of 1 Savigliano 60 tonne Transformer
July 2013	Invercargill Substation	Removal of 4 Savigliano 35 tonne Transformers
July 2013	Haywards Substation	Demolition of the capacitor yard and overhead gantry directly underneath 350 kV HVDC lines.
May 2013 – Sep 2013	Stoke Substation - Nelson	Removal of 6 Di Legnano 30 tonne Transformers and the demolition of the 33Kv switch yard.
March 2013 - April 2013	Addington Warehouse Christchurch.	Removal and disposal of 6 transformers from Addington.
September 2012	Masterton Substation (Electrix)	Removal of 3 x Asea 24 tonne and 4 x Savigliano 22.7 tonne transformers.
November 2012	Bunnythorpe Warehouse	Removal of 1 x 36 tonne Savigliano transformer. TP12-1243



August 2012 – December 2012	Benmore Power Station	Removal of 4 Asea 64 tonne, 4 Asea 53 tonne, 5 CGE 75 tonne and 1 Transelectrix 71 tonne Transformers and 1 Asea 53 tonne smoothing Reactor and spare winding.
March 2012-May 2012	Taranaki – Overhead Copper Line Replacement	HWA-WVY – Recovered 76.735 tonnes of Overhead copper lines –TP12-002
March 2012 – July 2012	Tokaanu Power Station	Removal of 4, 63 tonne Ferranti transformers
March 2012	Roxburgh Power Station	Removal of 3 Ferranti transformers weighing 45 tonnes each
October 2011 – February 2012	Aviemore Power Station	Removal of 4 ASGEN transformers weighing 67 tonnes each
December 2011	Bunnythorpe, Addington, Otira and Henderson	Removal of 14 large transformers from various Transpower sites around New Zealand.
December 2011	Haywards Substation	Removal of 3 Area transformers weighing 78 tonnes each.
June-July 2011	Marsden A Power Station	Removal of 125 tonne T1 Transformer
April 2011	Woodville Substation	Removal of 3 Transformers weighing 15 tonnes each.
March 2011 - May 2011	Waverley to Wanganui Copper Line Replacement	Removal of 99.87 tonnes of copper overhead transmission line – TP11-068
Feb 2011	Haywards Substation	Removal of 3 Area transformers weighing 78 tonnes each.
June 2010	Stratford to Hawera Copper Line Replacement	Removal of 60 tonnes of copper overhead transmission line – TP10-265
March – May 2010	Wanganui to Marton	Removal of 109 tonne of ACSR
Nov – Dec 2007	Islington to Roxburgh	Removal of 130 tonne of ACSR
Feb – March 2008	Wilton to Takapu Road	Removal of 130 tonne of ACSR
March 2010	Addington Warehouse	Removal of 3 Transformers weighing 19 tonnes each.
November 2009 – April 2010	Mount Maunganui Substation	Removal of 11 Transformers approx. 165 tonnes of total weight.
May 2009	Haywards Substation	Removal of the Pole 1 Smoothing Reactor / Transformer – 67 tonnes.
July 2008	Bunnythorpe Substation	Removal of two spare transformer windings weighing 6 tonnes each.
February 2008	Marsden Power Station	Removal of Core Steel and Tank – 112 tonnes.
February 2007	Kawerau Substation	Removal of 3 Breda Power Transformers weighing 17 tonnes each.
February 2007	Gisborne Substation	Removal of 4 Ferranti Transformers weighing 31 tonnes each.
October 2006	Bunnythorpe Substation	Removal of 2 CGE Transformers weighing 17 tonnes each.
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July 2006	Gisborne Substation	Removal of 1 Asea Transformer weighing 15 tonnes.
May 2006	Dannevirke Substation	Removal of 8 Asea Transformers weighing 14 tonnes each.
February 2006	Bunnythorpe Substation	Removal of 7 Ferranti Transformers at 26 tonnes each and 3 Asea Transformers at 22.45 tonnes each
November 2005	Wilton, Wellington	Collection of 13 tonnes of ACSR "Goat"
April 2003 – May 2003	Bay of Plenty	Collection of 83 tonnes of Copper Overhead and 74 tonnes of ACSR "Wolf" Conductor. ARI-EDG Line.
February 2002	Wellington	Collection of 78.6 tonnes of ACSR "Pigeon". BPE-MHO Transmission Line.
July 2001	Taranaki	Collection of 19 tonnes of ACSR "Zebra". NPL-SFD A Transmission Line.
February 2001	Wilton, Wellington	Collection of 20.5 tonne of Copper Overhead
December 2000	Taranaki	Collection on 90 tonnes of Copper Overhead. FHL-WDV A&B Transmission Lines.
October 2000	Otahuhu, Transpower Warehouse	Collection of 105.26 tonnes Copper Overhead Lines and assorted line hardware. Bid Reference OT/040
April 2000 – August 2000	Taranaki	Recovery of 280 tonnes of Copper Overhead Lines. ONG-SFG A Line. Bid Reference MO036
January 2000	Melling, Wellington	Collection of 15 tonnes of Copper Overhead Lines. HAY-MLG Line. Bid Reference MO35
December 1998	Takapu Road, Wellington	Collection of 28 tonnes of Copper Overhead Lines. PKK-TKR A Line. Bid Reference MO34
October 1998	Otahuhu, Transpower Warehouse	Collection of 14 tonnes of Copper Overhead Lines. ARI-PAK Line. Bid Reference OT/036
April 1998	Otahuhu, Transpower Warehouse	Collection of 80 tonnes of Copper Overhead Lines. OTA-PEN A & B Lines, Bid Reference OT/035
September 1997	Miramar, Wellington	Onsite cutting and removal of a spare section of Cook Strait Cable weighing 350 tonnes. Bid Reference M029
December 1996 – April 1997	Khandallah Substation, Wellington	Complete onsite decommissioning of the entire substation including 14 large transformers, cables, overhead bus and switchgear.



Interesting Projects

Manapouri Transformers

In October 2016 Macaulay Metals was invited to submit a proposal for the removal and disposal of five 150 tonne transformers from the Manapouri underground Power Station. Macaulay Metals bid for the project was successful as was the final outcome. Manapouri is the largest hydroelectric and the 2nd largest power station in New Zealand. The five transformers were partially disassembled on site before being transported across lake Manapouri on barges and dismantled for recycling at a yard in Wilton. The lamination steel was packed into shipping containers and exported directly from South Port, the mild steel component were processed locally for export and the copper coils were transported to our Wellington yard for processing into copper granules.





Nova Energy TG2 Demolition and Disposal

The Nova Energy TG2 Isopentane Gas geothermal power plant was demolished in November 2020 – Jan 2021. With additional Site clearance works continued through 2021. The project required extensive risk management as Isopentane is extremely explosive. The preparation for demolition was extensive with complex testing requirements to ensure all potential pockets of explosive gas were completely flushed from the plant before any demolition work could commence. This project was Macaulay Metals second isopentane thermal power station demolition project, having previously, successfully demolished the TG1 plant for Nova Energy in July 2018.





Clyde Power Station – Tyree Transformers

Macaulay Metals completed the disposal of two 106 tonne Tyree Power transformers from the Clyde Power Station. The first was put up for tender by Contact Energy in May 2021 and Macaulay Metals was the successful bidder. The Transformer was transported to a yard in Cromwell for disassembly in July 2021 and processing for scrap metal recovery. Macaulay Metals offer for the second unit was also accepted by Contact and the unit was shifted to the same location in Cromwell for dismantling.

These units are some of the largest transformers Macaulay Metals has relocated for dismantling with the transport weight of the largest component, the tank with Core and Windings, at over 72 tonnes.





New Plymouth Power Station – Substation Decommissioning February 2020 to August 2020

Electrix (Omexom) awarded Macaulay Metals the subcontract for a substantial decommissioning project at the former New Plymouth Power Station. The Power Station was decommissioned in 2008 and partially demolished in 2015-2015 leaving only the generator hall, administration annex and the main stack. The fully enclosed substations remained connected to the national grid. The grid was reconfigured in 2019 to bypass the substations and enable their decommissioning. Macaulay Metals scope was to completely remove all of the substation componentry leaving the buildings empty for the new owners, Port Taranaki. The scope of work ranged from confined space work, removing of underground cables to dismantling suspended switch yards at 17m above floor level and the disposal of 9 transformers with largest 4 being over 100 tonne each.





Wairaki to Whakamaru Pylon Dismantling – December 2014 to March 2015

Macaulay Metals was subcontracted to Transfield Services to fell and remove 90 transmission towers including the foundations. The project was completed on time and incident free. The steel was cut on site using an excavator mounted shear and Macaulay Metals custom built tractor pulled hook bin trailer was utilised to remove the tower steel with minimal damage to the land.





Transmission Gully Pylon Removal – February to March 2015

48 Pylons were removed from the proposed route of the new Transmission Gully Motorway. The towers were felled by Electrix and most were in extremely remote locations. The Macaulay Metals site team accessed the site with a excavator shear which was used to break down the towers were loaded into a Hydrema articulated dumper and transferred to a laydown area for transfer and transport off site.



Paraparaumu Substation 33kV Yard demolition – February – March 2015

Macaulay Metals Site team subcontracted to Electrix, dismantled and removed the entire redundant 33kV switch yard. The project involved the recovery of plant for reused by Transpower. The lowering and disposal of high-level gantry structures.



Incorporated as a separate project, the removal of two 30 tonne Hawker Siddeley Power Transformers.





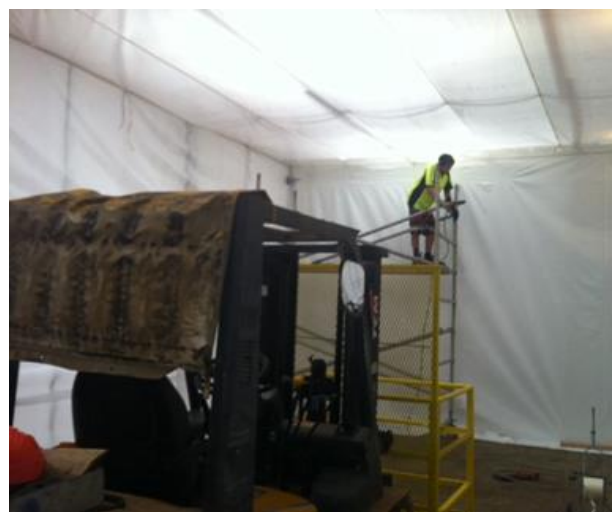
Benmore Power Station

Macaulay Metals successfully tendered for the removal of 15 transformers from the Benmore Power Station. The first stage of this project was completed during September to December 2012 with 15 transformers, weighing from 56 to 67 tonne transported from Benmore to Timaru and disassembled, processed for scrap and loaded into 35 containers for export.



Arapuni Stator - Asbestos Removal and Disposal

Macaulay Metals has invested considerable resources into investigating options for the most efficient recovery of all recyclable metals from the stators from the Arapuni Power Station in the Central North Island. The challenge was to come up with a methodology to safely remove the asbestos contamination from the copper and still achieve a positive return to the client. This was achieved and the project commenced in September 2012. The project involves the removal and processing of 4 Stators in 4 sections each plus 28 rotor poles per stator.





Aviemore Power Station

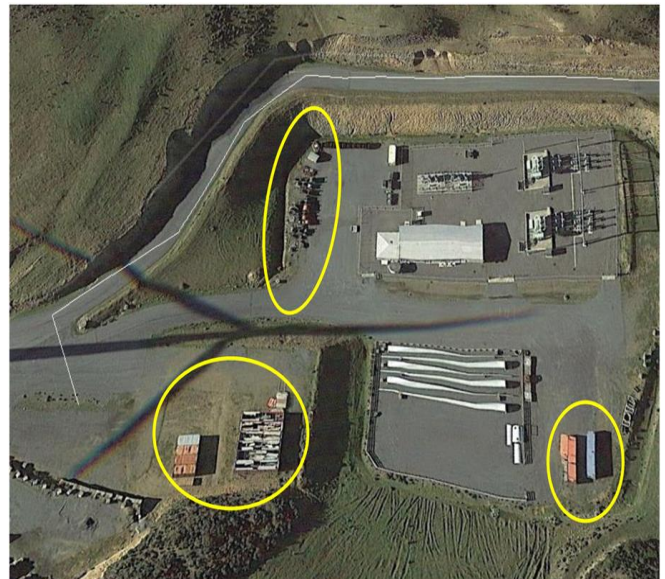
Macaulay Metals successfully tendered for the removal of 4 transformers from the Aviemore Power Station. The project was commenced during September 2011. Four 68 Asgen Transformers were transported to a yard in Christchurch and disassembled, processed for scrap and loaded into containers for export.



West Wind – Site Clearance

Recently Macaulay Metals was contracted by Meridian to remove a substantial amount surplus of cable, shipping containers and steel frames that were used to transport the generators and windmill components to site. The challenging access to site was overcome and a transport plan developed in conjunction with Meridian management on site.

Over two weeks Macaulay Metals decanted, reloaded and transported off site over 16 tonne of cable and 200 tonne of steel components, six 12m shipping containers and three 6m shipping containers.



NIGUP – BBUGL Alliance

Macaulay Metals was involved in the NIGUP Project working closely with the BBUGL Alliance during the dismantling and removal of the transmission towers on the ARI-PAK 110Kv line.

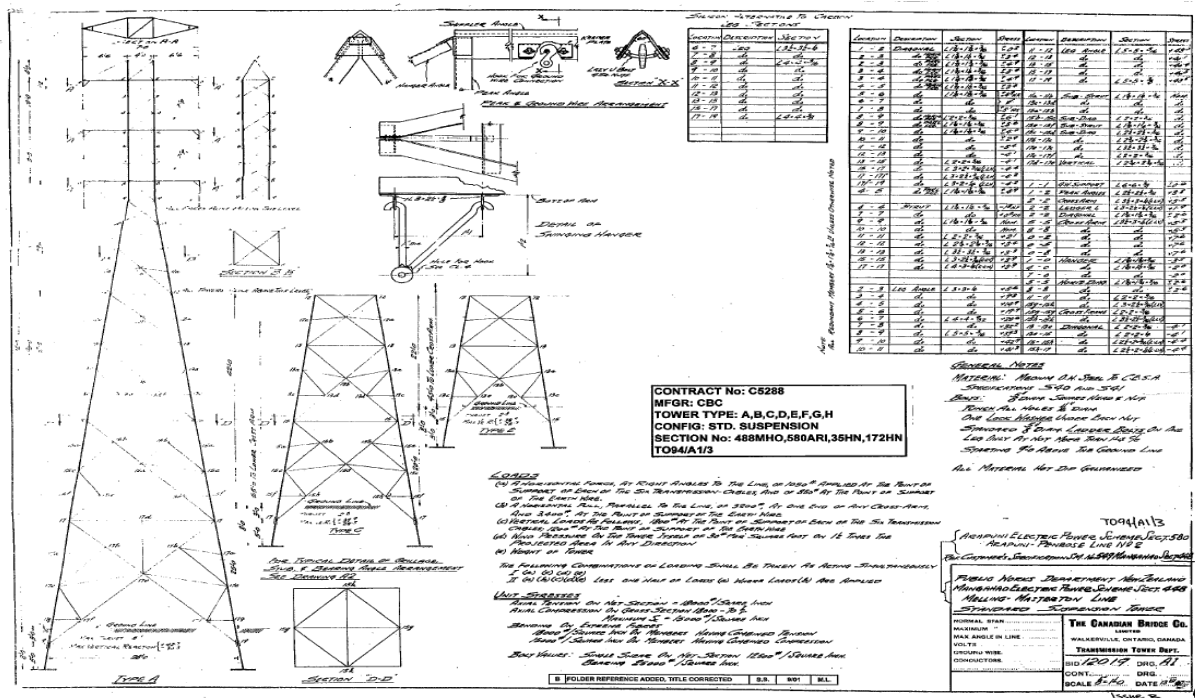
The project involved the removal of 350 plus towers and the recovery of 780 tonne of copper conductor.

Through extensive planning, testing and the commissioning of specialised machinery, Macaulay Metals developed the best methodology for the dismantling and transportation of the tower steel off site.

Once the towers were dropped to the ground the site team cut the towers up using a digger mounted shear. This has proven to be the quickest and most cost effective way of breaking down the towers into viably transportable bundles. Some towers needed to be lifted out of otherwise inaccessible locations by helicopter but most towers are dropped, dismantled and loaded into custom built all terrain hook bin trailer and towed off site.

Macaulay Metals also excavated the steel legs down to concrete level and burying them as per the job specification.

During the project Macaulay Metals scope of work expanded to include the felling of the towers.





Removal of Cook Strait Power Cable

In September 2017 Macaulay Metals successfully tendered to remove a spare section of the Cook Strait Cable. The cable was located at Miramar in Wellington and was presented as one coil weighing 350 tonnes. We were a much smaller business at that time and didn't have much of our own equipment. We located a demolition contractor with a hydraulic shear attachment and subcontracted the cutting of the cable. Over a two week period we cut the cable up on site into 1.5m long pieces and loading the pieces into shipping containers. The cable was exported direct from site to an offshore cable processor. Now we own five of our own shears.

Removal of Cook Strait Fibre Optic Cable

In May 2018 Transpower recovered 750 tonnes of fibre optic cable from Cook Strait. The cable was discharge from a cable vessel directly onto Wellingtons Centre Port. The cable could only be left on the port for a very short period of 5 days. Macaulay Metals cut the entire lot of 750 tonnes up on site and loaded it out from site within the required 5 day window.





Recycling – the Full Lifecycle – In 2025 we recycled the Transformers from Benmore Power Station. Below are A few pictures of the Transformers leaving Benmore in 2015 and another picture of them being transported to Benmore 47 years earlier !





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