SCHEDULE OF REQUIREMENTS (To be completed by client)

	(i.e. be compressed by enough	
SYSTE	M DETAIL	
1.0	Transformer required for: <u>Cambridge Diesel Depot</u> substation/location	
2.0	Nominal system voltage: 0.400 kV	
3.0	Number of phases: 3ph	
4.0	Frequency:50_Hz	
5.0	Neutral point effectively earthed:	Yes/No
TRANS	SFORMER DETAIL	
1.0	Type of transformer: Outdoor: Yes Indoor:	
2.0	Number of phases: Single phase:Three phase: Yes	_
3.0	Rated power:750_kVA	
4.0	Impedance percentage %:4.72	
5.0	Primary voltage rating:11 kV	
6.0	Secondary voltage rating:kV	
7.0	Vector group:	
TANK	TYPE	
1.0	Free-breathing	Yes/No
2.0	Sealed (Transformer main tank cover joint shall be welded)	Yes/No
FITTIN	GS REQUIRED	
1.0	Conservator with oil level indication.	Yes/No
2.0	Silica gel breather	Yes/No
3.0	Gas and oil actuating relay with test and sample valves	Yés/No
4.0	Main tank drain valve	Yes/No
5.0	Indicating thermometer	. /
5.1	Oil temperature	Yes/No
5.2	Winding temperature indication	Yes/No

6.0

7.0

8.0

8.1

Radiators.

Ratio:

Auxiliary wiring terminal box

Neutral current transformer required

N/A

Class: N/A	
VA Rating: N/A	,
Off circuit tap switch required	Yes/I
Number of tap positions: _ 5	
Bushings required: Outdoor: Indoor: Yes	,
High voltage side	Yes/I
Low voltage side	Yes/I
Cable box required	Yes/I
Number and types of cables per phase	
High voltage side: N/A	
Low voltage side: 1 x 70mm2 CU SWA	
Neutral required	
High voltage side	Yes/I
Low voltage side	Yes/I
Number and types of cables per neutral: 1 x 95mm2 CU SWA	
Mountings	
Pole mounting	Yes/I
Platform mounting	Yes/I
Flat underbase	Yes/I
Skid underbase	Yes/I
Wheels and axles	Yes/
Lifting lugs	Yes/I
Jacking pads	Yes/I
Jacking pads Dimensions (if critical)	Yes/I
	Yes/l

1.0	GENERAL	
1.1	Manufacturers name:	
2.0	TRANSFORMER DETAIL	
1.0	Type of transformer: Outdoor: Indoor:	
2.0	Number of phases: Single phase:Three phase:	
3.0	Rated power:kVA	
4.0	Impedance (percentage) %:	
5.0	Primary voltage rating:kV	
6.0	Secondary voltage rating:kV	
7.0	Tapping Switch.	
	No of positions: %Steps:	
8.0	Vector group:	
9.0	Free Breathing	Yes/No
10.0	Sealed	Yes/No
11.0	Welded cover	Yes/No
12.0	Method of Cooling:	
13.0	Overall dimensions: Lengthmm. Breadthmm. Height_	mm
14.0	Winding material: HV LV	_
15.0	Mass of core and windings:kg	
16.0	Oil capacity:(Litres)	
17.0	Mass of transformer complete with oil:kg	
18.0	HV end turns insulation reinforced Yes/N	lo
19.0	Type of breather and dehydrating agent:	_
20.0	The following information refers to the transformer when connected or tapping and appropriate reference temperature for the class of insulation use	
20.1	Iron loss (Watts):	
20.2	Copper loss at full load: at°C	
20.3	Total load losses (Watts):at°C	
20.4	Impedance at full load (percentage)ZX	
20.5	Regulation at full load at: 1.0 PFPercent, 0.8 PF	_ Percent a

20.6	Efficiency at full load at: 1.0 PF °C	Percent, 0.8 PF	Percent at
20.7	Temperature rise at rated voltage and	d power of:	
	Windings:°C		
	Top oil:°C		

SCHEDULE OF REQUIREMENTS (To be completed by client)

	(To be completed by client)
SYSTEM DETAIL	

1.0	Transformer required for: <u>Cambridge Goods</u> substation/location	
2.0	Nominal system voltage: 0.400_kV	
3.0	Number of phases: 3Ph	
4.0	Frequency:50 Hz	,
5.0	Neutral point effectively earthed:	Yes/No
TRANS	FORMER DETAIL	
1.0	Type of transformer: Outdoor: Indoor: _Yes	
2.0	Number of phases: Single phase:Three phase: _Yes	_
3.0	Rated power: 500_kVA	
4.0	Impedance percentage %:4.41	
5.0	Primary voltage rating:11_kV	
6.0	Secondary voltage rating: 0.400 kV	
7.0	Vector group: Dyn11	
TANK	ГҮРЕ	,
1.0	Free-breathing	Yes/No
2.0	Sealed (Transformer main tank cover joint shall be welded)	Yes/NY
FITTIN	GS REQUIRED	,
1.0	Conservator with oil level indication.	Yes/No
2.0	Silica gel breather	Yes/No
3.0	Gas and oil actuating relay with test and sample valves	Yes/No
4.0	Main tank drain valve	Yes/No
5.0	Indicating thermometer	,
5.1	Oil temperature	Yes/No
5.2	Winding temperature indication	Yès/No
6.0	Radiators.	Yes/No
7.0	Auxiliary wiring terminal box	Yes/No
8.0	Neutral current transformer required	Yes/No
8.1	Ratio: N/A	

8.2	Class: N/A				
8.3	VA Rating: N/A				
9.0	Off circuit tap switch required				
9.1	Number of tap positions: _ 5				
10.0	Bushings required: Outdoor: Yes Indoor:				
	High voltage side	Yes/No			
	Low voltage side	Yes/No			
11.0	Cable box required	Yes/No			
	Number and types of cables per phase				
	High voltage side: N/A				
	Low voltage side: 1x 70mm2 CU SWA				
12.0	Neutral required				
	High voltage side	Yes/No			
	Low voltage side	Yes/No			
	Number and types of cables per neutral: 1 x 95mm2 CU SW	Α			
13.0	Mountings				
13.1	Pole mounting	Yes/N			
13.2	Platform mounting	Yes/N			
13.3	Flat underbase	Yes/N			
13.4	Skid underbase	Yes/No			
13.5	Wheels and axles	Yes/No			
13.6	Lifting lugs	Yes/No			
13.7	Jacking pads	Yes/N			
14.0	Dimensions (if critical)				
	Length:mm. Breadth:mm. Height	:mm			
15.0	Special requirements: To be Cooled By ONAN and Gross weight less than 5000 kG	<u> </u>			
	Suitable for use above 1800m and drying under full vacum				

1.0	GENERAL	
1.1	Manufacturers name:	
2.0	TRANSFORMER DETAIL	
1.0	Type of transformer: Outdoor: Indoor:	
2.0	Number of phases: Single phase:Three phase:	
3.0	Rated power:kVA	
4.0	Impedance (percentage) %:	
5.0	Primary voltage rating:kV	
6.0	Secondary voltage rating:kV	
7.0	Tapping Switch.	
	No of positions: %Steps:	
8.0	Vector group:	
9.0	Free Breathing	Yes/No
10.0	Sealed	Yes/No
11.0	Welded cover	Yes/No
12.0	Method of Cooling:	
13.0	Overall dimensions: Lengthmm. Breadthmm. Height_	mm
14.0	Winding material: HV LV	_
15.0	Mass of core and windings:kg	
16.0	Oil capacity:(Litres)	
17.0	Mass of transformer complete with oil:kg	
18.0	HV end turns insulation reinforced Yes/N	lo
19.0	Type of breather and dehydrating agent:	_
20.0	The following information refers to the transformer when connected or tapping and appropriate reference temperature for the class of insulation use	
20.1	Iron loss (Watts):	
20.2	Copper loss at full load: at°C	
20.3	Total load losses (Watts):at°C	
20.4	Impedance at full load (percentage)ZX	
20.5	Regulation at full load at: 1.0 PFPercent, 0.8 PF	_ Percent a

20.6	Efficiency at full load at: 1.0 PF °C	Percent, 0.8 PF	Percent at
20.7	Temperature rise at rated voltage and	d power of:	
	Windings:°C		
	Top oil:°C		

SCHEDULE OF REQUIREMENTS (To be completed by client)

	(To be completed by client)
SYSTEM DETAIL	

1.0	Transformer required for: Queenstown Station substation/location	
2.0	Nominal system voltage: 0.400_kV	
3.0	Number of phases: <u>3Ph</u>	
4.0	Frequency: 50 Hz	,
5.0	Neutral point effectively earthed:	Yes/No
TRANS	FORMER DETAIL	
1.0	Type of transformer: Outdoor: Yes Indoor:	
2.0	Number of phases: Single phase:Three phase: Yes	_
3.0	Rated power: 300 kVA	
4.0	Impedance percentage %:	
5.0	Primary voltage rating:11kV	
6.0	Secondary voltage rating: 0.400 kV	
7.0	Vector group: Dyn	
TANK T	YPE	,
1.0	Free-breathing	Yes/No
2.0	Sealed (Transformer main tank cover joint shall be welded)	Yes/No
FITTING	SS REQUIRED	,
1.0	Conservator with oil level indication.	Yes/No
2.0	Silica gel breather	Yes/No
3.0	Gas and oil actuating relay with test and sample valves	Yes/No
4.0	Main tank drain valve	Yes/No
5.0	Indicating thermometer	,
5.1	Oil temperature	Yes/No
5.2	Winding temperature indication	Yes/No
6.0	Radiators.	Yes/No
7.0	Auxiliary wiring terminal box	Yes/No
8.0	Neutral current transformer required	Yes/No
8.1	Ratio: N/A	

.2	Class:	<u>N/A</u>		
.3	VA Rating:	_N/A		,
.0	Off circuit tap	switch required		Yes/No
.1	Number of ta	p positions: <u>5</u>	<u> </u>	
0.0	Bushings req	uired: Outdoor: Yes	Indoor:	
	High voltage	side		Yes/No
	Low voltage	side		Yes/No
1.0	Cable box red	quired		Yes/No
	Number and	types of cables per phase		
	High voltage	side: N/A		
	Low voltage s	side: <u>1 x 70mm2 CU SWA</u>		
2.0	Neutral requi	red		
	High voltage	side		Yes/No
	Low voltage s	side		Yes/No
	Number and	types of cables per neutral: _	1 x 95mm2 CU SWA	
3.0	Mountings			
3.1	Pole mountin	g		Yes/Nð
3.2	Platform mou	nting		Yes/N
3.3	Flat underbas	se		Yes/No
3.4	Skid underba	se		Yes/No
3.5	Wheels and a	axles		Yes/No
3.6	Lifting lugs			Yes/No
3.7	Jacking pads			Yes/N&
4.0	Dimensions (if critical)		
	Length:	mm. Breadth:	mm. Height:	mm
5.0	Special requi	rements:		
	To be Cooled	d By ONAN and Gross weigh	it less than 5000 kG	

1.0	GENERAL	
1.1	Manufacturers name:	
2.0	TRANSFORMER DETAIL	
1.0	Type of transformer: Outdoor: Indoor:	
2.0	Number of phases: Single phase:Three phase:	
3.0	Rated power:kVA	
4.0	Impedance (percentage) %:	
5.0	Primary voltage rating:kV	
6.0	Secondary voltage rating:kV	
7.0	Tapping Switch.	
	No of positions: %Steps:	
8.0	Vector group:	
9.0	Free Breathing	Yes/No
10.0	Sealed	Yes/No
11.0	Welded cover	Yes/No
12.0	Method of Cooling:	
13.0	Overall dimensions: Lengthmm. Breadthmm. Height_	mm
14.0	Winding material: HV LV	_
15.0	Mass of core and windings:kg	
16.0	Oil capacity:(Litres)	
17.0	Mass of transformer complete with oil:kg	
18.0	HV end turns insulation reinforced Yes/N	О
19.0	Type of breather and dehydrating agent:	
20.0	The following information refers to the transformer when connected on tapping and appropriate reference temperature for the class of insulation use	
20.1	Iron loss (Watts):	
20.2	Copper loss at full load: at°C	
20.3	Total load losses (Watts):at°C	
20.4	Impedance at full load (percentage)ZX	
20.5	Regulation at full load at: 1.0 PFPercent, 0.8 PF	_ Percent a

°C	Percent, 0.8 PF	Percent at
Temperature rise at rated voltage and power of:		
Windings:°C		
Top oil:°C		
	Temperature rise at rated voltage ar	Temperature rise at rated voltage and power of: Windings:°C

SCHEDULE OF REQUIREMENTS (To be completed by client)

	(To be completed by client)
SYSTEM DETAIL	

1.0	Transformer required for: Queenstown Loco substation/location	
2.0	Nominal system voltage:0.400 kV	
3.0	Number of phases: <u>3Ph</u>	
4.0	Frequency: 50 Hz	,
5.0	Neutral point effectively earthed:	Yes/No
TRANS	FORMER DETAIL	
1.0	Type of transformer: Outdoor: Yes Indoor:	
2.0	Number of phases: Single phase:Three phase: _Yes	_
3.0	Rated power: 500 kVA	
4.0	Impedance percentage %:4.48	
5.0	Primary voltage rating:11_kV	
6.0	Secondary voltage rating: 0.400 kV	
7.0	Vector group: <u>Dyn11</u>	
TANK T	YPE	
1.0	Free-breathing	Yes/No
2.0	Sealed (Transformer main tank cover joint shall be welded)	Yes/No
FITTING	SS REQUIRED	,
1.0	Conservator with oil level indication.	Yes/No
2.0	Silica gel breather	Yes/No
3.0	Gas and oil actuating relay with test and sample valves	Yes/No
4.0	Main tank drain valve	Yes/No
5.0	Indicating thermometer	
5.1	Oil temperature	Yes/No
5.2	Winding temperature indication	Yes/No
6.0	Radiators.	Yes/No
7.0	Auxiliary wiring terminal box	Yes/No
8.0	Neutral current transformer required	Yes/No
8.1	Ratio: N/A	

3.2	Class:	N/A		
3.3	VA Rating:	N/A		,
9.0	Off circuit tap	switch required		Yes/No
9.1	Number of tap	positions: 5		
10.0	Bushings requ	ired: Outdoor: Yes	Indoor:	•
	High voltage s	ide		Yes/No
	Low voltage si	de		Yes/No
11.0	Cable box req	uired		Yes/No
	Number and ty	pes of cables per phase		
	High voltage s	ide: <u>N/A</u>		
	Low voltage si	de: <u>1 x 70mm2 CU SWA</u>	<u></u>	
12.0	Neutral require	ed		
	High voltage s	ide		Yes/No
	Low voltage si	de		Yes/No
	Number and ty	pes of cables per neutra	ıl: <u>1 x 95mm2 CU SWA</u>	
13.0	Mountings			
13.1	Pole mounting			Yes/No
13.2	Platform mour	ting		Yes/No
13.3	Flat underbase	;		Yes/No
13.4	Skid underbas	е		Yes/No
13.5	Wheels and ax	des		Yes/No
13.6	Lifting lugs			Yes/No
13.7	Jacking pads			Yes/No
14.0	Dimensions (if critical)			
	Length:	mm. Breadth:	mm. Height:	mm
15.0	Special require	ements:		
			ght less than 5000 kG	

1.0	GENERAL	
1.1	Manufacturers name:	
2.0	TRANSFORMER DETAIL	
1.0	Type of transformer: Outdoor: Indoor:	
2.0	Number of phases: Single phase:Three phase:	
3.0	Rated power:kVA	
4.0	Impedance (percentage) %:	
5.0	Primary voltage rating:kV	
6.0	Secondary voltage rating:kV	
7.0	Tapping Switch.	
	No of positions: %Steps:	
8.0	Vector group:	
9.0	Free Breathing	Yes/No
10.0	Sealed	Yes/No
11.0	Welded cover	Yes/No
12.0	Method of Cooling:	
13.0	Overall dimensions: Lengthmm. Breadthmm. Height_	mm
14.0	Winding material: HV LV	_
15.0	Mass of core and windings:kg	
16.0	Oil capacity:(Litres)	
17.0	Mass of transformer complete with oil:kg	
18.0	HV end turns insulation reinforced Yes/N	О
19.0	Type of breather and dehydrating agent:	
20.0	The following information refers to the transformer when connected on tapping and appropriate reference temperature for the class of insulation use	
20.1	Iron loss (Watts):	
20.2	Copper loss at full load: at°C	
20.3	Total load losses (Watts):at°C	
20.4	Impedance at full load (percentage)ZX	
20.5	Regulation at full load at: 1.0 PFPercent, 0.8 PF	_ Percent a

°C	Percent, 0.8 PF	Percent at
Temperature rise at rated voltage and power of:		
Windings:°C		
Top oil:°C		
	Temperature rise at rated voltage ar	Temperature rise at rated voltage and power of: Windings:°C