

ZTR

ZAPOROZHTRANSFORMATOR

REFERENCE LIST 2013





REFERENCE LIST



2013

**RELIABLE PARTNER
RELIABLE EQUIPMENT**

Since 1947 «Zaporozhtransformator» PJSC (ZTR) has been supplying high quality power transformers and shunt reactors to the Customers in different industries. ZTR transformers operate in 86 countries worldwide.

ZTR manufactures power transformers and electrical reactors of voltage range from 10 kV up to 1150 kV and power range from 1000 kVA up to 1250 MVA. With annual production capacity 60 000 MVA ZTR is the largest single-site manufacturer in Europe and CIS.

ZTR's production output in 1988 reached the record index on a global scale – 70 000 MVA.

ZTR strives for continuous quality improvements, constantly elaborates new product types and develops design and manufacturing technology in order to meet any customer technical requirements.

The reference list contains the information about power transformers and shunt reactors produced by ZTR from the 1970 to the 2012 inclusively and provides information about installation site, type and quantity of equipment. Information is grouped geographically, and further by product class.



ZTR
ZAPOROZHTRANSFORMATOR

The logo features the letters 'ZTR' in a large, bold, white, stylized font. Below it, the full name 'ZAPOROZHTRANSFORMATOR' is written in a smaller, white, sans-serif font. The background of the logo area is a dark blue, semi-transparent image of an industrial facility with a grid-like structure.

ALGERIA, ANGOLA, EGYPT, ETHIOPIA*,
GHANA*, GUINEA, GUINEA-BISSAU,
LIBYA, MALI, MOROCCO, MOZAMBIQUE*,
NIGERIA, SOMALI, TUNISIA*, UGANDA*

AFRICA

6



ARGENTINA, BOLIVIA, BRAZIL, CANADA,
CHILE, COLOMBIA, CUBA, GUATEMALA,
MEXICO, NICARAGUA*, PARAGUAY,
PERU, URUGUAY, USA, VENEZUELA

AMERICA

13



AFGHANISTAN, BANGLADESH, CAMBODIA,
CHINA, INDIA, INDONESIA*, IRAN, IRAQ,
JORDAN, KUWAIT, LAOS, MALAYSIA, MONGOLIA,
MYANMAR, NEPAL*, NORTH KOREA, PAKISTAN,
SRI LANKA, SYRIA, UAE, VIETNAM, YEMEN

ASIA AND MIDDLE EAST

20



ARMENIA, AZERBAIJAN, BELARUS,
GEORGIA, KAZAKHSTAN, KYRGYZSTAN,
MOLDOVA, RUSSIA, TAJIKISTAN,
TURKMENISTAN, UKRAINE, UZBEKISTAN

CIS COUNTRIES**

34



ALBANIA*, BOSNIA&HERZEGOVINA, BULGARIA,
CROATIA, CZECH REPUBLIC, ESTONIA, FINLAND,
GERMANY, GREECE, HUNGARY, ICELAND,
LATVIA, LITHUANIA, MACEDONIA, POLAND,
ROMANIA, SERBIA & MONTENEGRO, SLOVAKIA,
SPAIN, SWITZERLAND, TURKEY

EUROPE

75



* all supplies prior to 1970

** Power transformers of voltages 110 kV and higher, capacity 63 MVA and higher



ZTR
ZAPOROZHTRANSFORMATOR

AFRICA



ALGERIA
ANGOLA
EGYPT
ETHIOPIA*
GHANA*
GUINEA
GUINEABISSAU
LIBYA
MALI
MOROCCO
MOZAMBIQUE*
NIGERIA
SOMALI
TUNISIA*
UGANDA*

ZTR entered the African market in 1960. At present, our transformers and reactors operate fault-free at power plants and substations in Egypt, Algeria, Morocco, Nigeria, Guinea, Angola, Kenya.

In severe operating conditions with little maintenance our equipment proved itself at its best, ensuring uninterrupted operation of power systems in heat, sand storms and tropical rains.

The very first supply to the African continent was for Aswan Hydro Power Plant (Egypt), at the time referred to as construction of the century. For that project we have manufactured more than 20 transformers 206 and 167 MVA, 500 kV.

All transformers exceeded designed lifetime and almost all of them are still in reliable and uninterrupted operation for over 40 years. Within 4 years (2004-2007) ZTR supplied to Egypt 26 units of 500 kV transformers.

Kenya republic has become the 86th country in sales reference list of the transformer equipment manufactured by "Zaporozhtransformator" PJSC. In 2012 ZTR has signed a contract for the delivery of 4 transformers rated for 90 MVA voltage 220 kV for Kenyan company "The Kenya Electricity Generating Company" ("KenGen") which will be installed on the geothermal power stations OLKARIA-I and OLKARIA-IV at the height of 2000 m with an excess content of hydrogen sulfide in the air.



AFRICA



ALGERIA

Power transformers of voltages up to 66 kV				total	8
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Jijel TPP	Three phase two-winding transformer 1 MVA, 35 kV	OLTC	ONAN	2	1989-1991
	Three phase two-winding transformer (split LV winding) 32 MVA, 35 kV	OLTC	ONAF	6	1988-1989
Power transformers of voltages 110-220 kV				total	3
Jijel TPP	Three phase two-winding transformer 250 MVA, 220 kV	OCTC	OFAF	3	1988-1989

ANGOLA

Power transformers of voltages up to 66 kV				total	3
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Capanda HPP	Three phase two-winding transformer 2.5 MVA, 35 kV	OLTC	ONAN	3	2002
Power transformers of voltages 110-220 kV				total	13
Capanda HPP	Single phase two-winding transformer 53 MVA, 220 kV	—	OFAF	7	2002
	Single phase two-winding transformer 53 MVA, 220 kV	OCTC	OFAF	6	2005
Electrical reactors				total	5
ENE / Uige s/s	Three phase controllable reactor 60 MVA, 220 kV		ONAF	1	2012
Kamama s/s, Viana s/s	Three phase controllable reactor 60 MVA, 230 kV, 1776 A		ONAF	2	2008
ENE / Capanda Elevadora s/s, Viana s/s	Three phase controllable reactor 100 MVA, 400 kV		ONAF	2	2012

EGYPT

Power transformers of voltages up to 66 kV				total	54
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Iron & Steel	Three phase two-winding transformer 25 MVA, 6 kV	OLTC	ONAF	1	2005
Nubaria PS-I&II	Three phase two-winding transformer 32 MVA 16,5 kV	OLTC	ONAF	4	2004
Various s/s	Three phase two-winding transformer 4 MVA, 35 kV	OLTC	ONAN	2	1994
Suez Steel Co.	Three phase two-winding transformer 40 MVA, 33 kV	OLTC	ONAF	1	2008
Suez TPP	Three phase two-winding transformer (split LV winding) 25 MVA, 35 kV	OLTC	ONAF	1	1979
Various mobile s/s	Three phase two-winding transformer 10 MVA, 66 kV	OLTC	ONAN	10	1973
Helmia s/s, Nag-Hammadi s/s, Iron & Steel and others	Three phase two-winding transformer 25 MVA, 66 kV	OLTC	ONAF	35	1992-2004



AFRICA

Power transformers of voltages 110-220 kV			total	36	
Various s/s	Three phase three-winding transformer 16 MVA, 132 kV	OLTC	ONAF	6	1965-1970
Aswan HPP and others	Three phase three-winding transformer 32 MVA, 132 kV	OLTC	ONAF	13	1965-1995
Nag-Hammadi s/s	Three phase two-winding transformer 90 MVA, 132 kV	OLTC	OFAF	9	1974-1990
Suez TPP	Three phase two-winding transformer (split LV winding) 60 MVA, 220 kV	OLTC	ONAF	1	1979
New 10th of Ramadan s/s, Sadat City s/s, El-Sheikh Zayed s/s	Three phase three-winding transformer 125 MVA, 220 kV	OLTC	ONAF	5	2002-2003
Suez Steel Co.	Three phase two-winding transformer 220 MVA, 220 kV	OLTC	ONAF	2	2008

Power transformers of voltages 500-750 kV			total	81	
Various s/s	Single phase three-winding autotransformer 95 MVA, 500/132 kV	OLTC	OFAF	7	1968-1970
Nag-Hammadi s/s	Single phase three-winding autotransformer 95 MVA, 500/132 kV	OLTC in the common neutral	OFAF	7	1974-1978
Aswan HPP	Single phase two-winding autotransformer 107 MVA, 500/132 kV	OLTC in the common neutral	OFAF	8	1967-2001
Nubaria - I s/s, Sidi Krir s/s	Single phase three-winding autotransformer 167 MVA, 500/220 kV	OLTC	ONAF	14	2004-2006
Cairo-500 s/s and others	Single phase three-winding autotransformer 167 MVA, 500/230 kV	OLTC in 230 kV line	OFAF	15	1967-1996
Nubaria - I&II s/s, Sidi Krir s/s	Single phase three-winding autotransformer 167 MVA, 500/241 kV	OLTC	ONAF	6	2005-2007
Taba s/s	Single phase three-winding autotransformer 167 MVA, 500/243 kV	OLTC in 500 kV line	ONAF	4	1997
Cair West TPP	Three phase three-winding autotransformer 375 MVA, 500/235 kV	OCTC	OFAF	2	1995
Nubaria I&II s/s	Three phase two-winding transformer 300 MVA, 500 kV	OCTC	ONAF	4	2004
	Three phase two-winding transformer 340 MVA, 500 kV		ONAF	2	2004
Aswan HPP	Three phase two-winding transformer 206 MVA, 500 kV		OFAF	12	1967-1996

Electrical reactors			total	9	
Taba s/s	Single phase neutral reactor 0.72 MVA _r , 145 kV, 40 A	ONAN	1	1	1996-1997
	Single phase shunt reactor 33.3 MVA _r , 400 kV, 144.2 A	ONAN	4	4	1996-1997
	Single phase shunt reactor 33.3 MVA _r , 500 kV, 155.4 A	ONAN	4	4	1996-1997

ETHIOPIA

Power transformers of voltages up to 66 kV			total	4	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 1 MVA, 10 kV		ONAN	4	1962



AFRICA

Power transformers of voltages 220-330 kV				total	2
Gilgel Gibe s/s	Three phase three winding autotransformer 40 MVA, 230/132/33 kV	OLTC	ONAF	1	2007
Sebeta s/s	Three phase two-winding transformer 25 MVA, 230 kV	OLTC	ONAF	1	2007
Electrical reactors				total	2
Gilgel Gibe s/s	Three phase shunt reactor 45 MVA, 400 kV, 65 A		ONAN	2	2007

GHANA*

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 2 MVA, 35 kV		ONAN	2	1963

GUINEA

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Alumina company of Guinea S.A.	Three phase two-winding transformer 16 MVA, 16 kV	OCTC	ONAF	2	2005

GUINEA-BISSAU

Power transformers of voltages up to 66 kV				total	4
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 2.5 MVA, 10 kV	OLTC	ONAN	2	1989
	Three phase two-winding transformer 2.5 MVA, 35 kV	OLTC	ONAN	2	1989

LIBYA

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 6.3 MVA, 35 kV		ONAN	2	1984



AFRICA

MALI

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Selinge-Kalani T&D company	Three phase two-winding transformer 10 MVA, 66 kV	OLTC	ONAF	2	1984

MOROCCO

Power transformers of voltages 110-220 kV				total	6
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Jerada TPP	Three phase two-winding transformer 70 MVA, 220 kV	OCTC	ONAF	3	1970-1971
Al-Wahda HPP	Three phase two-winding transformer 97 MVA, 220 kV	OCTC	ONAF	3	1996

Power transformers of voltages 220-330 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Tizgui s/s	Three phase two-winding autotransformer 100 MVA 225 kV	OLTC	OFAF	2	2004

MOZAMBIQUE*

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 0.75 MVA, 10 kV		ONAN	2	1962

NIGERIA

Power transformers of voltages up to 66 kV				total	661	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year	
Various s/s	Three phase two-winding transformer 0.1 MVA, 11 kV	OCTC	ONAN	10	1990-1991	
	Three phase two-winding transformer 0.2 MVA, 11 kV	OCTC	ONAN	75	1990-1992	
	Three phase two-winding transformer 0.3 MVA, 11 kV	OCTC	ONAN	110	1990-1992	
	Three phase two-winding transformer 0.5 MVA, 11 kV	OCTC	ONAN	43	1990-2000	
	Three phase two-winding transformer 1 MVA, 11 kV	OCTC	ONAN	2	1990-1991	
	Three phase two-winding transformer 0.1 MVA, 33 kV	OCTC	ONAN	21	1990-1992	
	Three phase two-winding transformer 0.2 MVA, 33 kV	OCTC	ONAN	155	1990-1992	
	Three phase two-winding transformer 0.3 MVA, 33 kV	OCTC	ONAN	130	1990-1993	
	Three phase two-winding transformer 0.5 MVA, 33 kV	OCTC	ONAN	96	1990-2000	
	Three phase two-winding transformer 1 MVA, 33 kV	OCTC	ONAN	15	1990-1991	
	Agroindustrial companies	Three phase two-winding transformer 10 MVA, 35 kV	OLTC	ONAF	4	1981



Power transformers of voltages 110-220 kV				total	11
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Adjaokuta TPP	Three phase two-winding transformer 25 MVA, 132 kV	OLTC	ONAF	4	1982-1984
	Three phase two-winding transformer 63 MVA, 132 kV	OLTC	ONAF	7	1981-1982

SOMALIA

Power transformers of voltages up to 66 kV				total	4
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 1 MVA, 35 kV		ONAN	3	1976
	Three phase two-winding transformer 6.3 MVA, 35 kV		ONAN	1	1973

TUNISIA*

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 1.6 MVA, 10 kV		ONAN	2	1966

UGANDA*

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 1.6 MVA, 10 kV		ONAN	2	1966



ZTR
ZAPOROZHTRANSFORMATOR

AMERICA



**ARGENTINA
BOLIVIA
BRAZIL
CANADA
CHILE
COLOMBIA
CUBA
GUATEMALA
MEXICO
NICARAGUA*
PARAGUAY
PERU
URUGUAY
USA
VENEZUELA**

Despite remote location of the plant from the region, customers from South and Central America often prefer transformers with ZTR logo to those manufactured by local and international suppliers.

Our plant was selected to supply 21 transformers of 172.5 MVA, 500 kV and 2 autotransformers of 250 MVA, 500 kV for Yacyreta HPS (Argentina), one of the biggest hydraulic power plants in the world.

Among our achievements we have Salto Grande HPP project (Argentina), where in order to meet the need of urgent supply, we designed and manufactured 10 transformers of 100 MVA, 500 kV within 5 months.

ZTR supplied 3 autotransformers of 250 MVA, 345 kV and shunt reactors for Atacama high-voltage substation in Chile, which is located at more than 2.5 km above sea level in a seismically active region (9 units MSK scale).

In 2011 ZTR supplied power transformers for the solar power-station Solana (USA) – two transformers of 200 MVA, 230 kV and two transformers of 58 MVA, 230 kV. In 2012 ZTR has also executed the contract on the delivery of the 9 MVA, 13.8 kV furnace transformer for metallurgical plant Felman Production, Western Virginia state, Letart, USA.

Guatemala has become the 85-th country in the transformer equipment sales reference list of ZTR. In 2012 ZTR signed the contract for delivery of four furnace transformers 45 MVA, 34,5 kV for Compania Guatemalteca de Nickel S.A. (CGN) as well as the contract with Solway Investment Group (SIG) company for delivery of two power transformers 100 MVA, 34,5 kV, purposed for Fenix Ferronickel Plant.

AMERICA





ARGENTINA

Power transformers of voltages up to 66 kV				total	3
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Central Puerto CCPP	Three phase two-winding transformer 30 MVA, 15.75 kV	OLTC	ONAF	2	1998
Macachin s/s	Three phase two-winding transformer 10 MVA, 34.5 kV	OLTC	ONAN	1	2000
Power transformers of voltages 110-220 kV				total	7
Central Puerto CCPP	Three phase two-winding transformer 307 MVA, 132 kV	OCTC	ONAF	2	1998
	Three phase two-winding transformer 355 MVA, 132 kV	OCTC	ONAF	1	1998
Costanera TPP	Three phase two-winding transformer 400 MVA, 220 kV		OFAF	1	1980
Pilar TPP	Three phase two-winding transformer 215 MVA, 132 kV		ONAF	3	2009
Power transformers of voltages 220-330 kV				total	3
San Juan s/s	Three phase three-winding autotransformer 150 MVA, 230/132 kV	OLTC in MV line	ONAF	2	1997-1998
San Nicolas TPP	Three phase two-winding transformer 412 MVA, 230 kV	OLTC	ONAF	1	2006
Power transformers of voltages 500-750 kV				total	82
Salto Grande s/s, Macachin s/s	Single phase three-winding transformer 50 MVA, 500/138 kV	OLTC	ONAN/ ONAF1 in HV neutral ONAF2	8	2000-2001
Salto Grande HPP	Single phase two-winding transformer (split LV winding) 100 MVA, 500 kV		OFAF	10	1999
Bahia Blanca HPP	Single phase two-winding transformer 135 MVA, 500 kV		OFAF	11	1981-1982
Piedra del Aguila HPP	Single phase two-winding transformer 135 MVA, 500 kV	OLTC	OFAF	15	1989-1990, 2012
Yacyreta HPP	Three phase two-winding transformer 172.5 MVA, 500 kV	OCTC	OFAF	21	1993-1997
	Three phase two-winding autotransformer 250 MVA, 500/220 kV	OLTC in neutral	OFAF	2	1993-1995
Resistencia s/s, Bahia Blanca s/s, Malvinas s/s, Campana s/s	Three phase three-winding transformer 300 MVA, 500 kV	OLTC	ONAF	5	1995-2005
Pico Truncado s/s	Single phase three-winding transformer 50 MVA, 500/138 kV	OLTC	ONAF	4	2006
Rosario s/s	Three phase three-winding autotransformer 300 MVA, 500/138 kV	OLTC in neutral	ONAF	1	1999
Campana s/s	Three phase three-winding transformer 300 MVA, 500/138 kV	OLTC	ONAF	1	2006
ZTR-Enesta/Transener	Three phase two-winding transformer 300 MVA, 500 kV	OLTC	ONAF	1	2005
Ingentis TPP	Three phase two-winding transformer 150 MVA, 525 kV	OLTC	ONAF	2	2008
Chocon s/s	Three phase three-winding autotransformer 150 MVA, 500 kV	OLTC	ONAF	1	2009



AMERICA

Electrical reactors		total	6	
Salta s/s	Single phase neutral reactor 0.084 MVAR, 123 kV, 10 A	ONAN	1	1998
	Three phase shunt reactor 40 MVAR, 345 kV, 67 A	ONAN	1	1998
Macachin s/s	Single phase shunt reactor 50 MVAR, 500 kV, 173 A	ONAN	3	2000-2001
	Single phase neutral reactor 320 MVAR, 110 kV, 20 A	ONAN	1	2000

BOLIVIA

Power transformers of voltages up to 66 kV		total	2		
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 6.3 MVA, 35 kV		ONAN	2	1974

BRAZIL

Power transformers of voltages 500-750 kV		total	3		
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Tijuco Preto s/s	Single phase three-winding autotransformer 500 MVA, 765/345 kV	OLTC in MV line	ONAN/ ONAF1/ ONAF2	3	1999-2001

Electrical reactors		total	3	
Tijuco Preto s/s	Single phase shunt reactor 120 MVAR, 800 kV, 260 A	ONAN	3	1999

CANADA

Power transformers of voltages 110-220 kV		total	2		
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Nortlandpower T&D company	Three phase two-winding transformer 85 MVA, 138 kV	OCTC	ONAF	2	1989-1993

CHILE

Power transformers of voltages 330-400 kV		total	3		
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Atacama s/s	Three phase three-winding autotransformer 250 MVA, 345/220 kV	OLTC	ONAF	3	1998

Electrical reactors		total	2	
Atacama s/s	Three phase shunt reactor 40 MVAR, 345 kV, 67 A	ONAN	1	1998
	Single phase neutral reactor 0.084 MVAR, 123 kV, 10 A	ONAN	1	1998



COLOMBIA

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 1 MVA, 15 kV		ONAN	2	1989
Power transformers of voltages 220-330 kV				total	3
Urra-1 HPP	Three phase two-winding autotransformer 90 MVA, 230/110 kV Single phase two-winding transformer 105 MVA, 230 kV	OLTC in neutral	OFAF	1	1998
			OFAF	2	1998

CUBA

Power transformers of voltages up to 66 kV				total	433
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Havana TPP, La Querbada s/s	Three phase two-winding transformer 1 MVA, 33 kV	OLTC	ONAN	181	1988-1991
Nico-Lopez s/s, Imekopal s/s	Three phase two-winding transformer 1.6 MVA, 33 kV	OLTC	ONAN	98	1988-1991
Haragua NPP, Pinar del Rio s/s	Three phase two-winding transformer 2.5 MVA, 33 kV	OLTC	ONAN	66	1988-1991
Various s/s	Three phase two-winding transformer 4 MVA, 33 kV	OLTC	ONAN	23	1988-1991
Haragua NPP Jose Marti s/s,	Three phase two-winding transformer 6.3 MVA, 33 kV	OLTC	ONAN	4	1988
Nico-Lopez s/s and others	Three phase two-winding transformer 10 MVA, 35 kV	OLTC	ONAF	26	1987-1991
Nicaro s/s	Three phase two-winding transformer 16 MVA, 35 kV	OLTC	ONAF	31	1989-1992
Haragua NPP	Three phase two-winding transformer 32 MVA, 35 kV	OLTC	ONAF	4	1988-1992
Power transformers of voltages 110-220 kV				total	77
Havana TPP	Three phase three-winding transformer 25 MVA, 110 kV	OLTC	ONAF	34	1974-1986
Various s/s	Three phase three-winding transformer 40 MVA, 110 kV	OLTC	ONAF	2	1987
Rente TPP, Mariel TPP, Havana TPP, Maximo Gomez s/s, Antonio Masso s/s, Santa Clara, Agramante s/s	Three phase three-winding autotransformer 125 MVA, 220/110 kV Three phase two-winding transformer 125 MVA, 220 kV	OLTC in MV line OCTC	OFAF	19	1975-1985
Haragua NPP, Havana TPP	Three phase two-winding transformer 250 MVA, 220 kV		OFAF	5	1984-1996
Havana TPP	Three phase three-winding autotransformer 250 MVA, 220/110 kV	OLTC in HV line	OFAF	2	1983-1986

GUATEMALA

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
CGN / Fenix Ferronickel Plant	Three phase two-winding transformer 100 MVA, 34,5 kV	OCTC	ONAF	2	2012



MEXICO

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Naco-Nogales CCPP	Three phase two-winding transformer 12 MVA, 16 kV	OCTC	ONAN	1	2002
	Three phase two-winding transformer 25 MVA, 16 kV	OCTC	ONAF	1	2002

Power transformers of voltages 220-330 kV				total	27
Francisco Villa s/s, Monclova s/s, Nueva Rosita s/s, Pantepec s/s, Escarcega s/s, Rio Escondido s/s	Single phase three-winding autotransformer 33.3 MVA, 230/138 kV	OLTC in MV line	ONAF	21	2000
Division del Norte s/s	Single phase three-winding autotransformer 100 MVA, 230/138 kV	OLTC in MV line	ONAF	4	2000
Naco-Nogales CCPP	Three phase two-winding transformer 150 MVA, 234 kV	OCTC	ONAF	1	2002
	Three phase two-winding transformer 260 MVA, 234 kV	OCTC	ONAF	1	2002

Power transformers of voltages 330-400 kV				total	14
Yautepec s/s	Single phase two-winding transformer 125 MVA, 400 kV	OCTC	ONAN/ ONAF1/ ONAF2	10	1992-1993
	Single phase three-winding autotransformer 125 MVA, 400/230 kV	OLTC	ONAF	4	2000

NICARAGUA*

Power transformers of voltages up to 66 kV				total	4
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 0.75 MVA, 10 kV		ONAN	4	1966

PARAGUAY

Power transformers of voltages 110-220 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Asuncion s/s	Single phase three-winding transformer 20 MVA, 220 kV	OLTC	ONAF	2	2001

PERU

Power transformers of voltages 110-220 kV				total	4
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Yuncan HPP	Three phase two-winding transformer 48.2 MVA, 220 kV		OFWF	3	2002
	Three phase three-winding autotransformer 120 MVA, 220/138 kV	OLTC in 220 kV line	ONAF	1	2002



URUGUAY

Power transformers of voltages 110-220 kV				total	5
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 63 MVA, 150 kV	OLTC	ONAF	5	2001
Power transformers of voltages 500-750 kV				total	10
San Carlos s/s, Montevideo-1 s/s	Single phase three-winding autotransformer 83.333 MVA, 500/150 kV	OLTC	ONAF	10	1998
Electrical reactors				total	4
San Carlos s/s	Single phase neutral reactor 0.0975 MVA, 33 kV, 8.5 A		ONAN	1	1998
Montevideo s/s	Single phase shunt reactor 16.7 MVA, 500 kV, 58 A		ONAN	3	1998

USA

Power transformers of voltages 220-330 kV				total	6
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Abener Teyma/Mojave Solar Power Plant	Three phase two-winding transformer 183 MVA, 220 kV	OCTC	ONAF	2	2012
Abener Teyma/Solana Solar Generation Plant	Three phase two-winding transformer 58 MVA, 230 kV	OCTC	ONAF	2	2011
Abener Teyma/Solana Solar Generation Plant	Three phase two-winding transformer 200 MVA, 230 kV	OCTC	ONAF	2	2011
Power transformers of voltages 330-400 kV				total	1
T&D company (Detroit city)	Three phase three-winding autotransformer 560 MVA, 345/120 kV	OCTC	ONAF	1	1972
Special transformers				total	1
Felman Production Inc	Single phase two-winding furnace transformer 9 MVA, 13,8 kV	OCTC	ONAF	1	2011

VENEZUELA

Power transformers of voltages 110-220 kV				total	4
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Josefa Camejo TPP, Ezequiel Zamora TPP	Three phase two-winding transformer 230 MVA, 115 kV	OCTC	OFAF	4	2007
Power transformers of voltages 220-330 kV				total	2
Alberto Lovera TPP	Three phase two-winding transformer 230 MVA, 230 kV	OCTC	OFAF	2	2007



ASIA AND MIDDLE EAST



- | | |
|--------------------|--------------------|
| AFGHANISTAN | MALAYSIA |
| BANGLADESH | MONGOLIA |
| CAMBODIA | MYANMAR |
| CHINA | NEPAL* |
| INDIA | NORTH KOREA |
| INDONESIA* | PAKISTAN |
| IRAN | SRI LANKA |
| IRAQ | SYRIA |
| JORDAN | UAE |
| KUWAIT | VIETNAM |
| LAOS | YEMEN |

ZTR has a long history of cooperation with customers in 22 countries of Asia and Middle East. The largest countries of the region China and India first tested our equipment more than 30 years ago.

ZTR is well known in Asian markets as a reliable partner, supplying the highest quality equipment, which operates in various climatic and seismic conditions.

This can be illustrated by our supplies to:

— China, where over 30 years we installed 250 large transformers which are still in operation with zero fault rate. Among them is the biggest transformer of 1000 MVA, 500 kV at Suizhong TPP.

— Vietnam, where the majority of transformer fleet was produced in Zaporozhye and operates virtually fault free for many decades. Within 4 years (2004-2007) ZTR supplied to Vietnam 27 units of 500 kV and 225 kV transformers and reactors. In 2007 three big contracts to Vietnam for three main EVN (Ministry of Electricity of Vietnam) Boards were negotiated: SPPMB (O MON s/s), CPPMB (Doc Soi s/s), NPPMB (Quang Ninh and Thuong Tin s/s).

— UAE, where more than 120 transformers were supplied in the early nineties.

In 2010 a contract with the Power Grid Corporation of India Ltd for supply of 43 reactors was concluded. ZTR has activities in the market of India as the member of the consortium with Indian company Crompton Greaves Ltd (CGL), as well as of the consortium with Indian company Transformers & Rectifiers of India Ltd; and within 2011-2012 ZTR fulfilled a series of contracts for delivery of transformers and reactors for this country.

ZTR also supplied a large number of transformers to Syria, Iran, Jordan, Iraq and Yemen.

ASIA AND MIDDLE EAST





AFGHANISTAN

Power transformers of voltages up to 66 kV				total	63
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Asrar Tashqurghani	Three phase two-winding transformer 0.1 MVA, 6 kV	OCTC	ONAN	12	2003
	Three phase two-winding transformer 0.16 MVA, 6 kV	OCTC	ONAN	12	2003
	Three phase two-winding transformer 0.25 MVA, 6 kV	OCTC	ONAN	16	2003
	Three phase two-winding transformer 0.4 MVA, 6 kV	OCTC	ONAN	9	2003
	Three phase two-winding transformer 0.63 MVA, 6 kV	OCTC	ONAN	5	2003
Various s/s	Three phase two-winding transformer 2.5 MVA, 35 kV	OCTC	ONAN	4	1988
	Three phase two-winding transformer 4 MVA, 35 kV	OCTC	ONAN	5	1988

Power transformers of voltages 110-220 kV				total	13
Various s/s	Three phase two-winding transformer 6.3 MVA, 110 kV	OLTC	ONAN	2	1986
Naghlu HPP	Single phase two-winding transformer 24 MVA, 110 kV	OCTC	ONAF	7	2007
Various s/s	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	OFAF	2	1986-1987
Herat s/s	Three phase two-winding transformer 40 MVA, 110 kV	OLTC	ONAF	2	2003

Electrical reactors				total	3
Ministry of Electricity and Water / Naibabad s/s	Three phase shunt reactor 10 MVA, 220 kV, 26,2 A		ONAN	1	2010
	Three phase shunt reactor 25 MVA, 220 kV, 66,45 A		ONAN	2	2010

BANGLADESH

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Horazal TPP	Three phase two-winding transformer (split LV winding) 25 MVA, 35 kV	OLTC	ONAF	2	1986

Power transformers of voltages 110-220 kV				total	5
Horazal TPP	Three phase two-winding transformer (split LV winding) 32 MVA, 132 kV	OLTC	ONAF	1	1983
	Three phase two-winding transformer 125 MVA, 220 kV	OCTC	OFAF	4	1986-1988

Power transformers of voltages 220-330 kV				total	6
Horazal TPP	Three phase three-winding autotransformer 125 MVA, 230/132 kV	OLTC	OFAF	2	1984
Horazal TPP, Cuggupahr TPP	Three phase two-winding transformer 125 MVA, 242 kV	OCTC	OFAF	4	1995-1999



CAMBODIA

Power transformers of voltages up to 66 kV				total	4
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 1 MVA, 15 kV	OCTC	ONAN	2	1989
	Three phase two-winding transformer 10 MVA, 35 kV	OLTC	ONAF	2	1988

CHINA

Power transformers of voltages up to 66 kV				total	36
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Lansingchang s/s	Three phase two-winding transformer 6.3 MVA, 10 kV	OCTC	ONAN	1	1991
Jiangze TPP, Huandao TPP, Mudanjiang TPP, Shuangyashan TPP	Three phase two-winding transformer (split LV winding) 32 MVA, 35 kV	OLTC	ONAF	10	1988-1990
Nankin TPP, Ingkou TPP, Shantou TPP, Jisian s/s, Shuangyashan TPP	Three phase two-winding transformer (split LV winding) 40 MVA, 35 kV	OLTC	ONAF	16	1988-1995
Lianyungang NPP, Mudanjiang TPP, Jisian s/s	Three phase two-winding transformer (split LV winding) 63 MVA, 35 kV	OLTC	ONAF	5	1988-2002
Lianyungang NPP	Three phase two-winding transformer 63 MVA, 35 kV	OLTC	ONAF/ ONAF	4	2002-2003

Power transformers of voltages 110-220 kV				total	40
Various s/s	Three phase two-winding transformer 40 MVA, 110 kV	OLTC	ONAF	18	1990-1991
Lianyungang NPP	Three phase two-winding transformer (split LV winding) 63 MVA, 220 kV	OLTC	ONAF	2	2002-2003
Weifang TPP, Tsian Jin Long s/s and others	Three phase three-winding transformer 120 MVA, 220 kV	OLTC	OFAF	5	1994-1995
Siruchan s/s, Vang Thuang Yui s/s and others Chanang s/s	Three phase three-winding transformer 150 MVA, 220 kV	OLTC	OFAF	3	1995-1997
	Three phase three-winding transformer 180 MVA, 220 kV	OLTC	OFAF	2	1998
Jiangze TPP, Huandao TPP, Mudanjiang TPP, Shuangyashan TPP	Three phase two-winding transformer 250 MVA, 220 kV	OCTC	OFAF	10	1988-1989

Power transformers of voltages 220-330 kV				total	10
Nankin-2 TPP, Ingkou-2 TPP, Shantou-2 TPP	Three phase two-winding transformer 400 MVA, 235 kV		OFAF	6	1990-1994
	Three phase two-winding transformer 400 MVA, 242 kV		OFAF	4	1994



ASIA AND MIDDLE EAST

Power transformers of voltages 500-750 kV			total	82	
Shentou-1 TPP, Datong-2 TPP	Three phase two-winding transformer 250 MVA, 500 kV	OFAF	3	1984	
Chiangnbay s/s	Single phase three-winding autotransformer 250 MVA, 500/230 kV	OCTC in 230 kV line	OFAF	3	2000
Harbin Power Bureau, Hefei Power Bureau, Tianjin Power Bureau, Fan Jan s/s, Chang Ping s/s, An Ding Meng s/s, Hanan s/s, Beijiao-3 s/s, Hexin s/s, Jiamusi s/s, Hanyang s/s, Jian Jia Fang s/s	Single phase three-winding autotransformer 267 MVA, 500/230 kV	OLTC in 230 kV line	OFAF	67	1984-1999
Lianyungang NPP	Single phase two-winding transformer 417 MVA, 500 kV	OCTC	ODWF	7	2002-2003
Suizhong TPP	Three phase two-winding transformer 1000 MVA, 500 kV			2	1997

Electrical reactors			total	8	
Jiangsu Pingliang Power Plant	Single phase shunt reactor 6 MVA, 110 kV, 100 A		ONAN	2	1999
	Single phase shunt reactor 30 MVA, 330 kV, 143 A		ONAN	6	1999

INDIA

Power transformers of voltages up to 66 kV			total	16	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Kudankulam NPP	Three phase two-winding auxiliary (split LV winding) transformer 63 MVA, 24 kV	OCTC	ONAF	4	2006
Vindhyachal TPP	Three phase two-winding auxiliary (split LV winding) transformer 25 MVA, 15 kV	OLTC	ONAF	1	1993
	Three phase two-winding transformer (split LV winding) 40 MVA, 35 kV	OLTC	ONAF	11	1987-1992

Power transformers of voltages 110-220 kV			total	44	
Neyveli TPP	Three phase three-winding transformer 50 MVA, 132 kV	OLTC	ONAF	2	1963
Patraty TPP	Three phase three-winding transformer 60 MVA, 132 kV	OLTC	ONAF	2	1963
	Three phase two-winding transformer 60 MVA, 132 kV		ONAF	2	1964
Vindhyachal TPP, Kahalgaoon TPP and others	Three phase two-winding transformer (split LV winding) 63 MVA, 132 kV	OLTC	ONAF	4	1985-1989
Obra TPP	Three phase two-winding transformer 63 MVA, 220 kV		ONAF	12	1963-2004
Kudankulam NPP	Three phase three-winding transformer 63 MVA, 220 kV	OLTC	ONAF	5	2005
Patraty TPP	Three phase three-winding autotransformer 63 MVA, 220 kV	OLTC	ONAF	5	1964-1965
Various s/s	Three phase two-winding transformer 125 MVA, 220 kV		OFAF	3	1965
	Three phase two-winding transformer 135 MVA, 220 kV		OFAF	5	1964
Neyveli TPP	Three phase three-winding autotransformer 125 MVA, 220 kV	OLTC	OFAF	4	1965-1967



ASIA AND MIDDLE EAST

Power transformers of voltages 330-400 kV			total	19	
Baglihar HEP	Single phase two-winding transformer 60 MVA, 400 kV	OLTC	OFWF	10	2003
Kudankulam NPP	Single phase two-winding transformer 417 MVA, 400/6,3 kV	OCTC	OFAF	7	2006
	Three phase three-winding autotransformer 315 MVA, 400/220 kV	OLTC	OFAF	2	2006

Power transformers of voltages 500-750 kV			total	6	
Power Grid Corp of India Ltd / Champa s/s, Vindhyachal s/s	Single phase three-winding autotransformer 500 MVA, 765/400/33 kV	OLTC	ONAF	6	2012

Special transformers			total	45	
Kudankulam NPP	Three phase two-winding dry type transformer 0,4 MVA, 6 kV	OCTC	AN	2	2005
	Three phase two-winding dry type transformer 1 MVA, 6 kV	OCTC	AN	3	2005
	Three phase two-winding dry type transformer 1,6 MVA, 6 kV	OCTC	AN	4	2005
	Three phase two-winding dry type transformer 4 MVA, 6 kV	OCTC	AN	4	2005
	Three phase two-winding dry type transformer 32 MVA, 6 kV	OCTC	AN	32	2005

Electrical reactors			total	49	
Kudankulam NPP	Single phase reactor 26.67 MVA, 420 kV, 109.97 A		ONAN	6	2006
Power Grid Corporation of India Ltd/Wardha s/s, Bina s/s, Balia s/s, Ranchi s/s, Satna s/s, Gwalior s/s	Single phase shunt reactor 80 MVA, 765 kV		ONAN	39	2011
Power Grid Corporation of India Ltd/Sasaram s/s	Single phase shunt reactor 110 MVA, 765 kV		ONAN	4	2011

INDONESIA*

Power transformers of voltages up to 66 kV			total	6	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 2.5 MVA, 10 kV	OCTC	ONAN	6	1965

IRAN

Power transformers of voltages up to 66 kV			total	35	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Isfahan TPP	Three phase two-winding transformer (split LV winding) 25 MVA, 15 kV	OLTC	ONAF	8	1982-1994
Isfahan TPP, Ramin TPP	Three phase two-winding transformer 10 MVA, 35 kV	OLTC	ONAF	4	1992-1994
Ramin TPP, Aria Mehr metallurgical	Three phase two-winding transformer works 16 MVA, 35 kV	OLTC	ONAF	7	1975-1992



Power transformers of voltages up to 66 kV (end)

Isfahan TPP	Three phase two-winding transformer (split LV winding) 25 MVA, 35 kV	OLTC	ONAF	8	1982-1993
Ramin TPP	Three phase two-winding transformer (split LV winding) 40 MVA, 35 kV	OLTC	ONAF	5	1992-1994
Various s/s	Three phase two-winding transformer 10 MVA, 66 kV	OLTC	ONAF	2	1980
Isfahan metallurgical works	Three phase two-winding transformer (split LV winding) 63 MVA, 66 kV	OLTC	ONAF	1	2002

Power transformers of voltages 110-220 kV

total 24

Tabris s/s	Three phase three-winding transformer 16 MVA, 132 kV	OLTC	ONAF	1	1971
Iran Power Development Company/Fajr-II Power and Steam Generation Plant	Three phase two-winding transformer 315 MVA, 145 kV	OLTC	ONAF	1	2010
Isfahan TPP	Three phase three-winding autotransformer 125 MVA, 220/66 kV	OLTC	OFAF	2	1976
	Three phase two-winding transformer 250 MVA, 220 kV	OLTC	OFAF	5	1982-1983
Iran Liquefied Natural Gas Co.	Three phase two-winding transformer 160 MVA, 220 kV	OLTC	ONAF	2	2009
Pars TPP, Iran Liquefied Natural Gas Co., Iran Power Development Company/Pareh Sar	Three phase two-winding transformer 200 MVA, 220 kV	OLTC	ONAF	13	2009-2010

Power transformers of voltages 220-330 kV

total 7

Shazand TPP and others	Three phase two-winding transformer 400 MVA, 241.5 kV	OLTC	OFAF	4	1997-1998
Sahand TPP	Three phase two-winding transformer 400 MVA, 245 kV	OLTC	OFAF	3	2001-2003

Power transformers of voltages 330-400 kV

total 12

Isfahan TPP	Three phase two-winding transformer 250 MVA, 400 kV	OLTC	OFAF	4	1993-1994
Iran Power Development Company/Hormozgan, Semnan	Three phase two-winding transformer 200 MVA, 400 kV	OLTC	ONAF	6	2010
Iran LNG PP	Three phase three-winding autotransformer 400 MVA, 400/220 kV	OLTC	OFAF	2	2011

Power transformers of voltages 400-500 kV

total 1

Bushehr NPP	Three phase two-winding transformer 780 MVA, 420 kV	OLTC	OFAF	1	2004
-------------	---	------	------	---	------

Electrical reactors

total 29

Bandar Abbas 400 kV GIS s/s, Shahroud s/s, Sabzevar s/s, Aboutaleb s/s	Single phase neutral earthing reactor 0.51 MVA, 26 kV, 19.92 A		ONAN	8	2004-2007
Sabzevar s/s, Aboutaleb s/s	Three phase shunt reactor 25 MVA, 20 kV, 721.7 A		ONAN	4	2007
Chabahar s/s	Three phase shunt reactor 25 MVA, 230 kV		ONAN	3	2008
Sabzevar s/s, Shahroud s/s, Aboutaleb s/s	Three phase shunt reactor 50 MVA, 400 kV, 72.17 A		ONAN	5	2007
Bandar Abbas 400 kV GIS s/s	Three phase shunt reactor 50 MVA, 400 kV, 72.2 A		ONAN	3	2004



ASIA AND MIDDLE EAST

Electrical reactors (end)		total	29	
Sormogh s/s	Three phase shunt reactor 50 MVA, 400 kV, 62.75 A	ONAN	2	2008
	Single phase shunt reactor 0,51 MVA, 510/26 kV, 19.92 A	ONAN	2	2008
Chehel Sotun s/s	Single phase neutral reactor 0,51 MVA, 26 kV	ONAN	1	2009
	Three phase shunt reactor 50 MVA, 400 kV	ONAN	1	2009

IRAQ

Power transformers of voltages up to 66 kV			total	52	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Zanayan s/s, Hospital Rizagry s/s, Harir s/s, Shaqlawaa s/s, Kanimasi s/s, Ammadyia s/s, Batel s/s, Sarsenk s/s, Aqra s/s, Barderesh s/s, Sailo s/s	Three phase two-winding transformer 0.25 MVA, 10 kV	OCTC	ONAN	22	2002
Various s/s	Three phase two-winding transformer 6.3 MVA, 10 kV	OCTC	ONAN	8	1983
Dibis TPP	Three phase two-winding transformer 16,5 MVA, 15,75 kV	OLTC	ONAF	2	2007
Najibiyah TPP	Three phase two-winding transformer 16 MVA, 11 kV	OLTC	ONAF	2	2001-2002
	Three phase two-winding transformer 16 MVA, 33 kV	OLTC	ONAF	1	2002
	Three phase two-winding transformer 16 MVA, 35 kV	OLTC	ONAF	5	1974-2001
Nasiria TPP, Yousifiyah TPP	Three phase two-winding transformer (split LV winding) 25 MVA, 35 kV	OLTC	ONAF	10	1976-2003
Ministry of Water Resources/ Badra-Jassan Station N°3	Three phase two-winding transformer 4 MVA, 35 kV		ONAN	2	2010

Power transformers of voltages 110-220 kV			total	48	
Dibis TPP	Three phase two-winding transformer 16 MVA, 132 kV	OLTC	ONAF	1	2007
Yousifiyah TPP, Nasiria TPP, Dokan HPP, North Rumeila s/s, Hadita s/s	Three phase three-winding transformer 16 MVA, 132 kV	OLTC	ONAF	34	1971-1992
Nasiria TPP	Three phase three-winding transformer 32 MVA, 132 kV	OLTC	ONAF	2	1978-1982
Yousifiyah TPP	Three phase two-winding transformer (split LV winding) 40 MVA, 132 kV	OLTC	ONAF	2	2002-2003
Dokan HPP	Three phase two-winding transformer 100 MVA, 132 kV		OFWF	5	1977-1978
Najibiyah TPP	Three phase two-winding transformer 135 MVA, 132 kV		OFWF	2	1974
Dibis TPP	Three phase two-winding transformer 200 MVA, 132 kV	OCTC	OFAF	2	2006

Power transformers of voltages 330-400 kV			total	15	
Nasiria TPP	Three phase two-winding transformer 250 MVA, 400 kV		OFWF	4	1976-1978
Hartha TPP	Three phase two-winding transformer 250 MVA, 400 kV	OCTC	OFAF	2	2001
Yousifiyah TPP	Three phase two-winding transformer 250 MVA, 400 kV		OFAF	5	2002-2003



ASIA AND MIDDLE EAST

Power transformers of voltages 330-400 kV (end)

Nasiria TPP	Three phase three-winding autotransformer 250 MVA, 400/132 kV	OLTC in neutral	OFAF	2	1976-1977
Youssifiah TPP	Three phase three-winding autotransformer 250 MVA, 400 kV	OLTC	OFAF	2	2003

Special transformers

total 3

Najibiyah TPP	Three phase two-winding dry protected transformer 0.63 MVA, 6.3 kV	OCTC	AN	1	2002
Soran s/s	Three phase two-winding earthing transformer 0.25 MVA, 10 kV	OCTC	ONAN	2	2002

JORDAN

Power transformers of voltages 110-220 kV

total 4

Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Tareq s/s, Suweimeh s/s	Three phase two-winding transformer 80 MVA, 132 kV	OLTC	ONAF	4	1996-1999

Special transformers

total 5

Tareq s/s, Suweimeh s/s	Three phase two-winding earthing transformer 0.2 MVA, 33 kV	OCTC	ONAN	5	1996-2000
-------------------------	--	------	------	---	-----------

KUWAIT

Power transformers of voltages up to 66 kV

total 705

Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 1 MVA, 10 kV	OCTC	ONAN	284	1976-1978
	Three phase two-winding transformer 1.25 MVA, 10 kV	OCTC	ONAN	421	1976-1978

LAOS

Power transformers of voltages 110-220 kV

total 2

Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Vanvieng s/s	Three phase two-winding transformer 6.3 MVA, 110 kV	OLTC	ONAN	2	1984

MALAYSIA

Power transformers of voltages 110-220 kV

total 7

Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Jor Power Station	Three phase two-winding transformer 27,8 MVA, 132 kV	OCTC	OFAF	4	2005
Woh Power Station	Three phase two-winding transformer 55,5 MVA, 132 kV	OCTC	OFAF	3	2005



ASIA AND MIDDLE EAST

MONGOLIA

Power transformers of voltages up to 66 kV				total	17
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 1 MVA, 10 kV	OCTC	ONAN	1	1989
	Three phase two-winding transformer 2.5 MVA, 10 kV	OCTC	ONAN	1	1989-1991
	Three phase two-winding transformer 6.3 MVA, 10 kV	OCTC	ONAN	1	1989-1991
Ulan-Bator-4 TPP	Three phase two-winding transformer (split LV winding) 25 MVA, 10 kV	OLTC	ONAF	2	1989
	Three phase two-winding transformer (split LV winding) 25 MVA, 15 kV	OLTC	ONAF	5	1981-1993
Various s/s	Three phase two-winding transformer 1 MVA, 35 kV	OCTC	ONAN	2	1991
	Three phase two-winding transformer 10 MVA, 35 kV	OLTC	ONAF	3	1987-1988
	Three phase two-winding transformer 16 MVA, 35 kV	OLTC	ONAF	1	1989
	Three phase two-winding transformer (split LV winding) 40 MVA, 35 kV	OLTC	ONAF	1	1993

Power transformers of voltages 110-220 kV				total	56
Harairak s/s, Gurvakbulag s/s, Arhan s/s and others	Three phase two-winding transformer 6.3 MVA, 110 kV	OLTC	ONAN	17	1977-1990
Balagur s/s, Erdenet TPP and others	Three phase two-winding transformer 10 MVA, 110 kV	OLTC	ONAF	20	1975-1990
Ulan-Bator-4 TPP	Three phase three-winding transformer 25 MVA, 110 kV	OLTC	ONAF	6	1982-1992
Various s/s	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	OFAF	6	1981-1983
Ulan-Bator-4 TPP	Three phase two-winding transformer 125 MVA, 220 kV	OCTC	OFAF	4	1983-1989
	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC in MV line	OFAF	3	1976-1982

MYANMAR

Power transformers of voltages up to 66 kV				total	1
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Kyauk Swe Kyo Steel Mill	Three phase two-winding transformer 30 MVA, 66 kV	OCTC	ONAN	1	1999

Power transformers of voltages 110-220 kV				total	3
Myauntagar s/s	Single phase three-winding transformer 20 MVA 220 kV		ONAN	3	2004

NEPAL*

Power transformers of voltages up to 66 kV				total	6
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 0.75 MVA, 10 kV	OCTC	ONAN	2	1963
	Three phase two-winding transformer 1.8 MVA, 35 kV	OLTC	ONAN	4	1963



ASIA AND MIDDLE EAST

NORTH KOREA

Power transformers of voltages up to 66 kV				total	20
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Pyongyang TPP	Three phase two-winding transformer 2.5 MVA, 10 kV	OCTC	ONAN	1	1989
Pukchan TPP, Pyongyang TPP	Three phase two-winding transformer 16 MVA, 35 kV	OLTC	ONAF	19	1970-1989
Power transformers of voltages 110-220 kV				total	20
Ungi s/s	Three phase three-winding transformer 32 MVA, 110 kV	OLTC	ONAF	1	1971
Industrial enterprise	Three phase two-winding transformer 70 MVA, 220 kV		ONAF	2	1976
Pyongyang TPP	Three phase two-winding transformer 80 MVA, 220 kV	OCTC	OFAP	2	1990
Pukchan TPP, Pyongyang TPP	Three phase two-winding transformer 125 MVA, 220 kV	OCTC	OFAP	15	1970-1989

PAKISTAN

Power transformers of voltages up to 66 kV				total	12
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Karachi TPP	Three phase two-winding transformer 10 MVA, 35 kV	OLTC	ONAF	7	1977
Multan-2 TPP, Guddu TPP	Three phase two-winding transformer (split LV winding) 25 MVA, 35 kV	OLTC	ONAF	5	1976-1990
Power transformers of voltages 110-220 kV				total	11
Multan TPP	Three phase two-winding transformer 16 MVA, 132 kV	OLTC	ONAF	2	1989-1990
Guddu TPP	Three phase two-winding transformer (split LV winding) 32 MVA, 132 kV	OLTC	ONAF	1	1975
Karachi TPP	Three phase two-winding transformer (split LV winding) 63 MVA, 132 kV	OLTC	ONAF	4	1977
Multan TPP, Guddu TPP	Three phase two-winding transformer 250 MVA, 220 kV		OFAP	4	1987-1990
Power transformers of voltages 500-750 kV				total	5
Guddu TPP	Three phase two-winding transformer 250 MVA, 500 kV		OFAP	1	1972
	Single phase three-winding autotransformer 95 MVA, 500/132 kV	OLTC	OFAP	4	1972

SRI LANKA

Power transformers of voltages 110-220 kV				total	4
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Salamala s/s, Veva s/s	Three phase two-winding transformer (split LV winding) 16 MVA, 132 kV	OLTC	ONAF	2	1976
Various s/s	Three phase two-winding transformer (split LV winding) 32 MVA, 132 kV	OLTC	ONAF	2	1981-1982



ASIA AND MIDDLE EAST

SYRIA

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Tishrin TPP	Three phase two-winding transformer (split LV winding) 25 MVA, 35 kV	OLTC	ONAF	2	1987-1988
Power transformers of voltages 110-220 kV				total	10
Tabka TPP	Three phase two-winding transformer 125 MVA, 220 kV	OCTC	OFWF	8	1972-1977
Tishrin TPP	Three phase two-winding transformer 250 MVA, 220 kV	OLTC	OFAF	2	1987-1989
Power transformers of voltages 220-330 kV				total	1
Tabka TPP	Three phase three-winding autotransformer 63 MVA, 230/121 kV	OLTC in MV line	ONAF	1	1976
Power transformers of voltages 330-400 kV				total	3
Power establishment of electricity for generation and transmission/Jandar	Three phase two-winding transformer 200 MVA, 400 kV	OLTC	ONAF	3	2010

UNITED ARABIAN EMIRATES (UAE)

Power transformers of voltages up to 66 kV				total	741
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 1 MVA, 10 kV	OCTC	ONAN	617	1974-1978
Dubai s/s	Three phase two-winding transformer 10 MVA, 33 kV	OLTC	ONAN	23	1992-1993
Various s/s	Three phase two-winding transformer 15 MVA, 33 kV	OLTC	ONAF	101	1992-1995

VIETNAM

Power transformers of voltages up to 66 kV				total	57
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Maidong s/s	Three phase two-winding transformer 1.6 MVA, 35 kV	OCTC	ONAN	1	1990
Chian HPP	Three phase two-winding transformer 2.5 MVA, 35 kV	OCTC	ONAN	8	1988
Various s/s	Three phase two-winding transformer 4 MVA, 35 kV	OLTC	ONAN	4	1988-1990
	Three phase two-winding transformer 6.3 MVA, 35 kV	OLTC	ONAN	6	1988-1990
	Three phase two-winding transformer 6.3 MVA, 35 kV	OLTC	ONAN	32	1981-1992
Hoa Binh HPP	Three phase two-winding transformer 10 MVA, 35 kV	OLTC	ONAN	2	1989
Falai TPP	Three phase two-winding transformer (split LV winding) 25 MVA, 35 kV	OLTC	ONAF	4	1980-1985



ASIA AND MIDDLE EAST

Power transformers of voltages 110-220 kV			total	95	
Thak-Mo HPP	Three phase three-winding transformer 16 MVA, 110 kV	OLTC	ONAF	1	1994
Various s/s	Three phase two-winding transformer 88 MVA, 110 kV	OCTC	OFAF	2	1993-1994
	Three phase three-winding transformer 25 MVA, 115 kV	OLTC	ONAF	11	1970-1998
Cat Lai s/s, Fu Lam s/s, South Sai Gon s/s Hoa Binh HPP	Three phase three-winding transformer 40 MVA, 115 kV	OLTC	ONAF	6	1994-1997
	Three phase three-winding transformer 63 MVA, 115 kV	OLTC	ONAF	4	2003-2005
Chian HPP and others	Single phase two-winding transformer 105 MVA, 220 kV	OCTC	OFAF	20	1988-1993
	Single phase two-winding transformer 105 MVA, 220 kV		OFAF	1	2004
	Single phase two-winding transformer 125 MVA, 220 kV	OCTC	OFAF	12	1989-1990
Falai TPP	Three phase two-winding transformer 125 MVA, 220 kV	OCTC	OFAF	4	1987-1988
	Three phase two-winding transformer 125 MVA, 220kV	OCTC	OFAF	2	1984-1985
Various s/s	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	OFAF	5	1986-1990
Hoa Binh HPP, Various s/s	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	OFAF	17	1983-1991
	Three phase three-winding autotransformer 250 MVA, 220/110 kV	OCTC	OFAF	2	1982-1983
Falai TPP	Three phase three-winding autotransformer 250 MVA, 220/110 kV	OCTC	OFAF	2	1982-1983
Nha Trang s/s, Viet Tri, Soc Son, Bac Ninh & Yen Bai, Quang Ninh	Three phase three-winding autotransformer 125 MVA, 225 kV	OLTC	ONAF	6	2004
Cat Lai s/s	Three phase three-winding autotransformer 250 MVA, 220 kV	OLTC	ONAF	2	2003
Power transformers of voltages 220-330 kV			total	3	
Trang Bang s/s	Three phase three-winding autotransformer 250 MVA, 225 kV	OLTC	ONAF	1	2005
South Sai Gon s/s	Three phase three-winding autotransformer 250 MVA, 225/115/23 kV	OLTC	ONAF	2	2005
Power transformers of voltages 500-750 kV			total	26	
Ialy HPP	Single phase two-winding transformer 72 MVA, 500 kV		OFAF	13	1997-1998
	Single phase two-winding transformer 72 MVA, 500 kV	OCTC	OFAF	1	2006
Doc Soi s/s, O Mon s/s, Quang Ninh&Thuong Tin S/S	Single phase three-winding autotransformer 50 MVA, 500/225 kV	OLTC	OFAF	12	2007
Special transformers			total	1	
Hoa Binh HPP	Three phase two-winding earthing transformer 0.32 MVA, 33 kV	OCTC	ONAN	1	1998
Electrical reactors			total	4	
O Mon s/s	Three phase shunt reactor 128 MVA, 500 kV, 134,4 A		ONAN	1	2007
Quang Ninh&Thuong Tin S/S	Three phase shunt reactor 60 MVA, 550 kV, 62.98 A		ONAN	1	2008
	Three phase shunt reactor 65 MVA, 500 kV, 68,2 A		ONAN	2	2007



YEMEN

Power transformers of voltages up to 66 kV				total	11
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Khalf s/s, Rajan s/s, Ghail Ba Wazeer s/s	Three phase two-winding transformer 5 MVA, 33 kV	OLTC	ONAN	4	1998
Joul Masha s/s, Munawarah s/s, Fuwah s/s	Three phase two-winding transformer 10 MVA, 33 kV	OLTC	ONAN	5	1998
DPS s/s	Three phase two-winding transformer 15 MVA, 33 kV	OLTC	ONAN	1	1998
Aden TPP	Three phase two-winding transformer 16 MVA, 35 kV	OLTC	ONAF	1	1988
Power transformers of voltages 110-220 kV				total	4
DPS s/s, Harshyat s/s	Three phase two-winding transformer 55 MVA, 132 kV	OLTC	ONAF	4	1998



CIS COUNTRIES



ARMENIA
AZERBAIJAN
BELARUS
GEORGIA
KAZAKHSTAN
KYRGYZSTAN
MOLDOVA
RUSSIA
TAJIKISTAN
TURKMENISTAN
UKRAINE
UZBEKISTAN

«Zaporozhtransformator» PJSC is a leader on the CIS transformer market, it's annual production capacity is up to 60 000 MVA. About 80% of all power transformers in CIS countries bear ZTR name. At present, more than 7000 large power transformers are operated across CIS countries.

All thirteen CIS nuclear power plants operate our transformers only. ZTR transformers are used at more than 75% hydraulic and thermal power plants in the region.

One of the most powerful three-phase transformers in the world the 1250 MVA, 330 kV unit was manufactured by our factory for Yuzhno-Ukrainskaya NPP, Ukraine, in 1980. Ultra-high power transformers for 1150 kV transmission lines in Russia were manufactured by ZTR.

ZTR's equipment successfully operates in all climatic and seismic conditions at CIS territory, from the coldest trans-polar regions to the hot deserts of Central Asia.

CIS COUNTRIES





CIS COUNTRIES

ARMENIA

Power transformers of voltages 110-220 kV				total	27
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Energosetstroy	Three phase two-winding transformer 6,3 MVA 110 kV	OLTC	ONAN	1	2004
Yerevan TPP	Three phase three-winding transformer 200 MVA, 110 kV		OFAF	2	1983-1989
Armyanskaya NPP	Three phase two-winding transformer 250 MVA, 110 kV		OFAF	1	1975
	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OLTC	OFAF	1	1975
Shambayskaya HPP	Three phase two-winding transformer 125 MVA, 220 kV		OFAF	2	1976
Armenia high-voltage lines	Three phase three winding autotransformer 125 MVA, 220/110 kV	OLTC	ONAF	1	2012
Various s/s	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	OFAF	1	1981
	Three phase two-winding transformer (split LV winding) 100 MVA, 220 kV	OLTC	OFAF	1	1989
	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	OFAF	13	1972-1989
	Three phase three-winding autotransformer 250 MVA, 220/110 kV	OLTC	OFAF	2	1989-2000
Razdanskaya TPP	Three phase two-winding transformer 200 MVA, 220 kV		OFAF	1	2009
	Three phase two-winding transformer 400 MVA, 220 kV		OFAF	1	2009

Power transformers of voltages 220-330 kV				total	2
Atarbekianskaya HPP	Three phase three-winding autotransformer 250 MVA, 330/220 kV	OLTC	OFAF	2	1986-1990

AZERBAIJAN

Power transformers of voltages 110-220 kV				total	63
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Industrial enterprise	Three phase two-winding transformer 6,3 MVA, 110 kV	OLTC	ONAN	1	2006
Gakh s/s	Three phase three-winding transformer 10 MVA, 110 kV	OLTC	ONAF	1	2011
Azerenergy, Baku water utility, Various s/s	Three phase two-winding transformer 16 MVA, 110 kV	OLTC	ONAF	6	2007-2010
Oguz s/s	Three phase three-winding transformer 16 MVA, 110 kV	OLTC	ONAF	2	2009
T&D company Barmek Azerbaijan Electric Shebekesi	Three phase two-winding transformer 25 MVA, 110 kV	OLTC	ONAF	1	2005
T&D company Barmek Azerbaijan Electric Shebekesi, Baku distribution network, Baku Electrical Distribution, Azerenergy, Azenko	Three phase three-winding transformer 25 MVA, 110 kV	OLTC	ONAF	6	2005-2008, 2011
Massaly s/s, Baku distribution network	Three phase three-winding transformer 40 MVA, 110 kV	OLTC	ONAF	5	2005-2007
Barda s/s, Binagadi s/s, Zabrat s/s	Three phase three-winding transformer 63 MVA 110 kV	OLTC	ONAF	4	2004-2005
Zabrat s/s	Three phase three-winding transformer 63 MVA, 110/22/6 kV	OLTC	ONAF	1	2008



CIS COUNTRIES

Power transformers of voltages 110-220 kV (end)

Azerenergy	Three phase three-winding transformer 63 MVA, 110/35/6 kV	OLTC	ONAF	3	2008
Sangachala s/s	Three phase three-winding autotransformer 125 MVA, 220 kV	OLTC	OFAF	1	2003
Various s/s, Sangachala s/s	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	OFAF	5	1981-2006
Ali-Bayramli s/s	Three phase two-winding transformer 180 MVA, 110 kV	OCTC	OFAF	3	2008
	Three phase two-winding transformer 180 MVA, 220 kV	OCTC	OFAF	2	2008
	Three phase two-winding transformer 180 MVA, 220 kV		OFAF	1	2009
Ali-Bayramlinskaya TPP	Three phase two-winding transformer 200 MVA, 110 kV		OFAF	3	1983-2000
	Three phase two-winding transformer 200 MVA, 220 kV	OCTC	OFAF	4	1982-1992
Various s/s, Ali-Bayramlinskaya TPP	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OLTC	OFAF	9	1972-2000
Shamkhorskaya HPP	Three phase two-winding transformer 250 MVA, 220 kV		OFAF	2	1982-2001
Khurdalan s/s, Azerenergy	Three phase three-winding autotransformer 250 MVA, 220/110 kV	OLTC	OFAF	2	2005-2008
Khurdalan s/s	Three phase three-winding autotransformer 250 MVA, 220 kV	OLTC	OFAF	1	2009

Power transformers of voltages 220-330 kV

total 39

Various s/s	Three phase three-winding autotransformer 125 MVA, 330/110 kV	OLTC	OFAF	4	1971-1983
	Single phase three-winding autotransformer 133 MVA, 330/220 kV	OLTC	OFAF	4	1984
Various s/s, Shamkhorskaya HPP	Three phase three-winding autotransformer 200 MVA, 330/110 kV	OLTC	OFAF	8	1972-2000
Various s/s, Mingechurskaya HPP	Three phase three-winding autotransformer 240 MVA, 330/220 kV	OCTC	OFAF	8	1970-1978
Mingechurskaya HPP	Three phase three-winding autotransformer 250 MVA, 330/220 kV	OLTC	OFAF	1	2001
Shamkhorskaya HPP	Three phase two-winding transformer 250 MVA, 330 kV		OFAF	1	1983
Azerenergy/Imishly s/s	Three phase three winding autotransformer 250 MVA, 330 kV	OLTC	OFAF	1	2007
Azerbaijanskaya TPP	Three phase two-winding transformer (split LV winding) 63 MVA, 330 kV	OLTC	OFAF	3	1981-1986
	Three phase two-winding transformer 400 MVA, 330 kV		OFAF	6	1984-1986
Ali-Bayramli s/s	Three phase three winding autotransformer 250 MVA, 330/110 kV	OLTC	OFAF	1	2008
	Three phase three winding autotransformer 250 MVA, 330/220 kV	OLTC	OFAF	2	2008

Power transformers of voltages 330-400 kV

total 5

Metallurgical industrial complex Gyanzha	Three phase two-winding transformer 80 MVA, 330 kV	OLTC	ONAF	1	2009
	Three phase two-winding transformer 125 MVA, 330 kV	OLTC	ONAF	1	2009
Ali-Bayramli s/s, Metallurgical industrial complex Gyanzha	Three phase three-winding autotransformer 250 MVA, 330 kV	OLTC	OFAF	3	2009



CIS COUNTRIES

Power transformers of voltages 500-750 kV			total	17	
Metallurgical industrial complex Gyanzha	Single phase three-winding autotransformer 167 MVA, 500 kV	OLTC	OFAF	4	2009
	Single phase three-winding autotransformer 167 MVA, 500/330 kV	OLTC	OFAF	6	1987, 1990
Azerbaijanskaya TPP	Three phase two-winding transformer 400 MVA, 525 kV		OFAF	3	1987-1989
Various s/s	Single phase three-winding autotransformer 267 MVA, 500/220 kV	OLTC	OFAF	4	1988

BELARUS

Power transformers of voltages 110-220 kV			total	101	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Industrial enterprises, Minskenergo, Vitebskenergo State power companies	Three phase two-winding transformer 2,5 MVA, 110 kV	OLTC	ONAN	8	2005-2009
Mogilevenergo, Grodnoenergo State power companies	Three phase two-winding transformer 6,3 MVA, 110 kV	OLTC	ONAN	2	2006-2007
Mogilevenergo State power company	Three phase three-winding transformer 10 MVA, 110 kV	OLTC	ONAF	1	2008
Minskenergo, Mogilevenergo State power companies	Three phase two-winding transformer 10 MVA, 110 kV	OLTC	ONAF	3	2007-2008
Minskenergo, Grodnoenergo State power companies, industrial enterprises	Three phase two-winding transformer 16 MVA, 110 kV	OLTC	ONAF	5	2007, 2009
Minsk Metro, Moscovskaya s/s, Minskenergo, Grodnoenergo, Brestenergo State power companies	Three phase two-winding transformer 25 MVA, 110 kV	OLTC	ONAF	15	2006-2007, 2009-2010
Brestenergo State power company/South-Western s/s	Three phase two-winding transformer (split LV winding) 25 MVA, 110 kV	OLTC	ONAF	2	2010
Industrial enterprises, Mogilevenergo, Grodnoenergo State power companies	Three phase two-winding transformer 40 MVA, 110 kV	OLTC	ONAF	6	2005-2008
Minskenergo, Belaruskaliy State power companies	Three phase two-winding transformer 40 MVA, 110 kV	OLTC	ONAN	4	2007
Industrial enterprise Belaruskali/Parogazovaya s/s	Three phase two-winding transformer 40 MVA, 110 kV	OLTC	ONAF	2	2012
Belaruskaliy State power company	Three phase two-winding transformer 63 MVA, 110 kV	OLTC	ONAN	1	2007
Minskenergo State power company	Three phase two-winding transformer (split LV winding) 63 MVA, 110 kV	OLTC	ONAF	2	1979
	Three phase two-winding transformer (split LV winding) 125 MVA, 110 kV	OLTC	OFAF	8	1986-1988
	Three phase two-winding transformer 125 MVA, 110 kV	OCTC	OFAF	1	2008
	Three phase two-winding transformer 400 MVA, 110 kV	OCTC	OFAF	2	1978



CIS COUNTRIES

Power transformers of voltages 110-220 kV (end)

Grodnoenergo State power companies	Three phase three-winding transformer 80 MVA, 110 kV	OLTC	ONAF	1	1983
Mogilevenergo State power company	Three phase two-winding transformer 200 MVA, 110 kV	OCTC	OFWF	1	1981
Brestenergo, Vitebskenergo, Gomelenergo State power companies	Three phase two-winding transformer 200 MVA, 110 kV	OCTC	OFAF	3	1977-1986
Brestenergo, Gomelenergo, Grodnoenergo, Minskenergo, Mogilevenergo State power companies	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	OFAF	26	1973-1991
Minskenergo State power company	Three phase three-winding autotransformer 180 MVA, 220/110 kV	OCTC	OFAF	1	1970
	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OCTC	OFAF	3	1984-1986
Brestenergo State power company	Three phase two-winding transformer 200 MVA, 220 kV	OCTC	OFAF	1	1982
Minskenergo, Gomelenergo State power companies	Three phase two-winding transformer 250 MVA, 110 kV	OCTC	OFAF	3	1988-2008

Power transformers of voltages 220-330 kV

total 81

Brestenergo State power company/Berezovskaya CCPP	Three phase two-winding transformer (split LV winding) 100 MVA, 330 kV	OLTC	ONAF	1	2010
Vitebskenergo, Gomelenergo, Mogilevenergo State power companies	Three phase three-winding autotransformer 125 MVA, 330/110 kV	OLTC	OFAF	15	1970-1984
Grodnoenergo State power company, Mogilevenergo State power company/Miradino s/s	Three phase three winding autotransformer 125 MVA, 330/110 kV	OLTC	ONAF	3	2008, 2010
Gomelenergo, Mogilevenergo State power companies	Three phase three-winding autotransformer 125 MVA, 330/220 kV	OLTC	OFAF	2	1975-1985
Grodnoenergo, Mogilevenergo State power companies	Single phase three-winding autotransformer 133 MVA, 330/220 kV	OLTC	OFAF	8	1976-1990
Lukolmskaya HPP	Three phase two-winding autotransformer 200 MVA, 330 kV	OLTC	ONAF	1	2003
Brestenergo, Vitebskenergo, Gomelenergo, Grodnoenergo, Minskenergo, Mogilevenergo State power companies	Three phase three-winding autotransformer 200 MVA, 330/110 kV	OLTC	OFAF	38	1979-2001
Brestenergo State power company/Berezovskaya CCPP	Three phase two-winding transformer 250 MVA, 330 kV		OFAF	1	2010
Gomelenergo State power company	Three phase three-winding autotransformer 250 MVA, 330/220 kV	OCTC	OFAF	1	1970
Vitebskenergo, Minskenergo State power companies	Three phase two-winding transformer 400 MVA, 330 kV	OCTC	OFAF	11	1974-1991

Power transformers of voltages 500-750 kV

total 4

Minskenergo State power company	Single phase three-winding autotransformer 330 MVA, 750/330 kV	OLTC	OFAF	4	1991-1992
---------------------------------	--	------	------	---	-----------



CIS COUNTRIES

Special transformers			total	6	
Municipal enterprise	Three phase two-winding converter transformer 1 MVA, 10 kV	OCTC	ONAN	2	2005
	Three phase two-winding converter transformer 1 MVA, 10/10 kV	OCTC	ONAN	4	2005
Electrical reactors			total	2	
Baranovich s/s	Three phase controllable reactor 180 MVA, 330 kV, 299.5 A		ONAF	1	2002
Mogilevenergo State power company	Three phase controllable reactor 180 MVA, 330 kV, 300 A		ONAF	1	2006

GEORGIA

Power transformers of voltages 110-220 kV			total	64	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Khrami HPP-1, Musical Centre Ureki, various s/s	Three phase two-winding transformer 6,3 MVA, 110 kV	OLTC	ONAN	3	2005, 2009
Musical Centre Ureki, Telasi / Aviazavod s/s	Three phase two-winding transformer 10 MVA, 110 kV	OLTC	ONAF	3	2009, 2012
Georgian State Electric System /Ipari s/s, New Beshumi	Three phase three-winding transformer 10 MVA, 110 kV	OLTC	ONAF	6	2011-2012
Industrial enterprises, Various s/s	Three phase two-winding transformer 16 MVA, 110 kV	OLTC	ONAF	2	2008-2009
Aragvi HPP	Three phase two-winding transformer 16 MVA, 110 kV	OCTC	ONAF	1	2012
Various s/s	Three phase three-winding transformer 16 MVA, 110 kV	OLTC	ONAF	1	2009
Shaori HPP	Three phase three-winding transformer 40 MVA, 110 kV	OLTC	ONAF	1	2005
Various s/s	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	OFAF	2	1985-1987
Industrial enterprises	Three phase two-winding transformer 125 MVA, 110 kV	OLTC	OFAF	1	2009
Tbilisskaya TPP	Three phase two-winding transformer 200 MVA, 110 kV		OFAF	2	1984-1987
Ladzhanuri HPP	Three phase two-winding transformer 80 MVA, 220 kV	OCTC	ONAF	2	1980
Various s/s, Tbilisskaya TPP, Tkvarcheli TPP	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	OFAF	27	1972-1992
Tkvarcheli TPP	Three phase two-winding transformer 125 MVA, 220 kV		OFWF	3	1970-1977
Various s/s, Inguri HPP	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OLTC	OFAF	7	1971-1980
Inguri HPP	Three phase two-winding transformer 200 MVA, 220 kV		OFAF	3	1971-1987



CIS COUNTRIES

Power transformers of voltages 220-330 kV			total	4	
Tbilisskaya TPP	Single phase three-winding autotransformer 133 MVA, 330/220 kV	OLTC	OFAF	3	1985
	Three phase three-winding autotransformer 240 MVA, 330/220 kV	OCTC	OFAF	1	1970
Power transformers of voltages 500-750 kV			total	35	
Energotrans company, Inguri HPP, Various s/s	Single phase three-winding autotransformer 167 MVA, 500/220 kV	OLTC	OFAF	20	1972-1997, 2012
Tbilisskaya TPP	Single phase three-winding autotransformer 267 MVA, 500/220 kV	OLTC	OFAF	5	1972-1996
Gardabani s/s	Single phase three-winding autotransformer 267 MVA, 500 kV	OLTC	OFAF	1	2009
Inguri HPP	Three phase two-winding transformer 320 MVA, 500 kV	OCTC	OFAF	1	2005
Tbilisskaya TPP, Inguri HPP	Three phase two-winding transformer 400 MVA, 525 kV		OFAF	8	1978-1990

KAZAKHSTAN

Power transformers of voltages 110-220 kV			total	418	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
KEGOC, Kazatomprom, Industrial enterprises	Three phase two-winding transformer 2,5 MVA, 110 kV	OLTC	ONAN	6	2005-2007, 2009
Kazatomprom, Almaty Power Consolidated, Moynakskaya HPP, Kazakhstan railway, Industrial enterprises	Three phase two-winding transformer 6,3 MVA, 110 kV	OLTC	ONAN	25	2006-2007, 2009
Atasu Pipe line, Industrial enterprises, Kazatomprom, North electricity transmission company, Talgarskaya s/s, Turgai-Petroleum	Three phase two-winding transformer 10 MVA, 110 kV	OLTC	ONAF	17	2005-2008
Various s/s	Three phase three-winding transformer 10 MVA, 110 kV	OLTC	ONAF	3	2009-2010
Industrial enterprises, Mittal Steel Temirtau, Turgai Petroleum, Kazatomprom, Almaty Power Consolidated, North electricity transmission company, various s/s	Three phase two-winding transformer 16 MVA, 110 kV	OLTC	ONAF	30	2006-2012
Industrial enterprises, Kazatomprom, Atyrau CHP, Samruk-energy / Makat s/s	Three phase three-winding transformer 16 MVA, 110 kV	OLTC	ONAF	8	2007-2008, 2010-2012
Aktogaj ore mining and processing enterprise, Eurasian atural Resources Corporation, Zhana Uzen power network, Astana power network, Sokolovsko-Sarbaynsk ore mining and processing enterprise, Mangistau electricity distribution network company, Kuruk s/s, Kumkol-6 s/s, Koktem-2 s/s, Various s/s, Industrial enterprises	Three phase two-winding transformer (split LV winding) 25 MVA, 110 kV	OLTC	ONAF	27	2005, 2008, 2010, 2012



CIS COUNTRIES

Power transformers of voltages 110-220 kV

North-Kazakhstan electricity distribution network company, Kumkol-6 s/s, Industrial enterprises: Varvarinskoye mine development project, Neftehim	Three phase two-winding transformer 25 MVA, 110 kV	OLTC	ONAF	10	2008, 2011-2012
Almaty Power Consolidated, Various s/s, Mangistau electricity distribution network company	Three phase three-winding transformer 25 MVA, 110 kV	OLTC	ONAF	10	2006-2009
Mangistau atomic energy plant-Kazatomprom	Three phase two-winding transformer 32 MVA, 110 kV	OLTC	ONAF	1	2012
Astana TPP-2, Almaty Power Consolidated	Three phase two-winding transformer (split LV winding) 32 MVA, 110 kV	OLTC	ONAF	4	2005-2009
Astana power grids, Almaty Power Consolidated	Three phase two-winding transformer (split LV winding) 40 MVA, 110 kV	OLTC	ONAN	7	2006, 2011-2012
Astana power grids, Akmoln electricity transmission, Almaty Power Consolidated, Eurasian Karaganda electricity distribution company, Almaty CHP, Natural Resources Corporation, Intercity power network, Various s/s, Industrial enterprises: Ust-Kamenogorsky titanium magnesium plant and others	Three phase two-winding transformer (split LV winding) 40 MVA, 110 kV	OLTC	ONAF	28	2006-2012
Ust-Kamenogorskaya HPP	Single phase two-winding transformer 40 MVA, 110 kV	OCTC	ONAF	3	2006,2012
Ust-Kamenogorskaya HPP	Single phase two-winding transformer 40 MVA, 110 kV		ONAF	1	2010
Almaty Power Consolidated, Industrial enterprises: Kazzinc, Karaganda electricity distribution company, Alatau Zharyk Company	Three phase three-winding transformer 40 MVA, 110 kV	OLTC	ONAF	13	2007-2011
Zheskazgan copper company, Astana power network, Alatau Zharyk Company, Industrial enterprises,	Three phase two-winding transformer (split LV winding) 63 MVA, 110 kV	OLTC	ONAF	16	2006-2008, 2010-2012
Mittal Steel Temirtau	Three phase two-winding transformer (split LV winding) 63 MVA, 110 kV	OLTC	OFAF	2	2011
Mittal Steel Temirtau	Three phase two-winding transformer 63 MVA, 110 kV	OLTC	ONAF	11	2004-2008
Mittal Steel Temirtau	Three phase three-winding transformer 63 MVA, 110 kV	OLTC	OFAF	3	2009, 2011
Almaty Power Consolidated, Astana power grids, Alatau Zharyk Company, Various s/s	Three phase two-winding transformer (split LV winding) 63 MVA, 110 kV	OLTC	ONAN	10	2007-2011
Industrial enterprise Kasting, Kazkhrom	Three phase two-winding transformer 80 MVA, 110 kV	OLTC	OFAF	5	2002-2005, 2009
Various s/s of Kasting	Three phase two-winding transformer (split LV winding) 80 MVA, 110 kV	OLTC	OFAF	2	2002
Atyrau CHP, Industrial enterprises	Three phase two-winding transformer 80 MVA, 110 kV	OLTC	ONAF	2	2008,2012



CIS COUNTRIES

Power transformers of voltages 110-220 kV

Kazakhmys corporation HPP, Industrial enterprises	Three phase three-winding transformer 80 MVA, 110 kV	OLTC	ONAF	2	2007-2008
Bukhtarminskaya HPP, Pavlodar CHP-3, Kazzinc	Three phase two-winding transformer 125 MVA, 110 kV	OCTC	OFAF	2	2006, 2012
Kazzinc	Three phase two-winding transformer 125 MVA, 110 kV		OFAF	1	2008
Kazakhstan Aluminium	Three phase two-winding transformer 125 MVA, 110 kV	OLTC	ONAF	2	2008
Astana TPP-2	Three phase two-winding transformer 160 MVA, 110 kV	OCTC	OFAF	1	2005
Akmolin electricity transmission company, Sarbaysk, North transmission grid company	Three phase two-winding transformer 180 MVA, 110 kV		OFAF	4	1983-1984
Akmolin electricity transmission company, Mangistau electricity distribution network company	Three phase two-winding transformer 250 MVA, 110 kV		OFAF	2	1982-1992
Eurasian Natural Resources Corporation	Three phase two-winding transformer 400 MVA, 110 kV		OFAF	2	1968, 2008
Kazakhstan Aluminium	Three phase two-winding transformer 25 MVA, 150 kV	OLTC	ONAF	1	2005
	Three phase three-winding transformer 25 MVA, 220 kV	OLTC	ONAF	2	2008
Industrial enterprises	Three phase two-winding transformer 25 MVA, 220 kV	OLTC	ONAF	1	2008
Kazakhstan pipe consortium	Three phase two-winding transformer 25 MVA, 220 kV	OCTC	ONAF	1	2012
Industrial park s/s	Three phase two-winding auxiliary (split LV winding) transformer 40 MVA, 220 kV	OLTC	ONAF	4	2012
Industrial enterprise Kasting, Vasytkovsk ore mining and processing enterprise	Three phase three-winding transformer 63 MVA, 220 kV	OLTC	ONAF	4	2008
Sarbaysk, Shimkent, Akmolin electricity transmission companies, Zhezkazgan, Pavlodar, Semipalatinsk, Taldikangan electricity distribution companies, Aktogaj ore mining and processing enterprise, Kazkhrom, Industrial enterprises, Kazatomprom	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	OFAF	17	1979-2007, 2010
KEGOC	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	ONAF	2	2006-2007
Industrial enterprises	Three phase two-winding transformer 80 MVA, 220 kV	OLTC	OFAF	2	2008
Kazakhstan national nuclear center	Three phase two-winding transformer 100 MVA, 220 kV	OCTC	OFAF	1	2005
Bukhtarminskaya HPP, Kazzinc	Single phase three-winding autotransformer 120 MVA, 220 kV	OCTC	OFAF	1	2006
	Single phase three-winding autotransformer 120 MVA, 220/110 kV	OCTC	OFAF	5	2002-2007
Mangistau electricity distribution network company	Three phase three-winding autotransformer 125 MVA, 220 kV	OLTC	OFAF	1	2009
Kazakhstan Aluminium	Three phase two-winding transformer 125 MVA, 220 kV		OFAF	4	1970-1971



CIS COUNTRIES

Power transformers of voltages 110-220 kV (end)

Akmolin, Aktyubinsk copper company, Kazzink, Almaty, Eastern, Western, Sarbaysk, Central, Northern, Shimkent electricity transmission companies, Zhambyl, Zhezkazgan, Karaganda, Kokshetau, Kostanay, Kyzylorda, Pavlodar, Semipalatinsk, Uralskenergo, Mangistau electricity distribution grid company, Zheskazgan TPP, Almaty Power Consolidated JSC, Industrial enterprises	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	OFAF	53	1970-2007, 2012
Industrial enterprises	Three phase two-winding transformer (split LV winding) 160 MVA, 220 kV	OLTC	OFAF	1	1982
Yermakovskaya TPP	Single phase three-winding autotransformer 167 MVA, 220 kV	OLTC	OFAF	1	1996
	Three phase two-winding autotransformer 240 MVA, 220 kV	OCTC	OFAF	2	1965-1968
Aktyubinsk copper company, Kazzink, Eastern electricity transmission companies, Kazkhrom, Mangistau electricity distribution network company, Aktogaj ore mining and processing enterprise, Industrial enterprises	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OLTC	OFAF	10	1975-2006
Eastern, Western, Sarbaysk electricity transmission companies, Karaganda electricity distribution company, Eurasian Natural Resources Corporation	Three phase three-winding autotransformer 240 MVA, 220/110 kV	OLTC	OFAF	12	1985-2008
Kazakhmys corporation	Three phase three-winding autotransformer 250 MVA, 220/110 kV	OCTC	OFAF	1	2004
Kazakhmys corporation, Astana power grids, KEGOC	Three phase three-winding autotransformer 250 MVA, 220/110 kV	OLTC	OFAF	10	2004, 2011-2012
Sarbaysk electricity transmission company, KEGOC	Three phase three-winding autotransformer 250 MVA, 220 kV	OLTC	OFAF	4	2003-2006, 2010
Actyubinsk ferroalloy factory	Three phase three-winding transformer 250 MVA, 220 kV	OLTC	ONAF	2	2012
Shulbinskaya HPP, Ust-Kamenogorskaya HPP	Three phase two-winding transformer 250 MVA, 220 kV		OFAF	3	1986-1989
Zhambyl HPP	Three phase two-winding transformer 250 MVA, 220 kV		OFAF	1	2008
Karaganda CHP	Three phase three-winding autotransformer 320 MVA, 220 kV	OLTC	OFAF	1	2011
Yermakovskaya TPP, Eurasian Natural Resources Corporation, Industrial enterprises	Three phase two-winding transformer 400 MVA, 220 kV		OFAF	6	1969-1975, 2009
Eurasian Natural Resources Corporation	Three phase two-winding transformer 400 MVA, 220 kV	OLTC	OFAF	1	2006
Shulbinskaya HPP, Ust-Kamenogorskaya HPP, Ekibastuzskaya-1 TPP	Three phase two-winding transformer 630 MVA, 220 kV		OFAF	4	1969-1979



CIS COUNTRIES

Power transformers of voltages 330-400 kV			total	1	
North transmission grid company	Single phase two-winding transformer 320 MVA, 400 kV	OLTC	ODAF	1	1986
Power transformers of voltages 500-750 kV			total	136	
Ulke s/s	Single phase three-winding autotransformer 167 MVA, 500 kV	OLTC	OFAF	4	2007
KEGOC	Single phase three-winding autotransformer 167 MVA, 500/220 kV	OLTC	ONAF	4	2005
KEGOC, Akmolin electricity transmission company, Almaty, Eastern, Sarbaysk, Central, Shimkent electricity transmission companies, Yermakovskaya TPP, Industrial enterprises, Kazakhstan Aluminium Smelter	Single phase three-winding autotransformer 167 MVA, 500/220 kV	OLTC	OFAF	88	1969-2007
Sarbaysk electricity transmission company	Three phase three-winding autotransformer 250 MVA, 500/110 kV	OLTC	OFAF	1	1971
Shulbinskaya HPP, Ust-Kamenogorskaya HPP, Ekibastuzskaya-1 CCPP, Eurasian Natural Resources Corporation, Samruk-energy/ Ekibastuzskaya-1 CCPP	Single phase three-winding autotransformer 267 MVA, 500/220 kV	OLTC	OFAF	15	1978-2008, 2011-2012
Eurasian Natural Resources Corporation	Three phase two-winding transformer 400 MVA, 500 kV		OFAF	1	2011
Ekibastuzskaya CCPP	Three phase two-winding transformer 630 MVA, 500 kV		OFAF	2	2010-2011
Shulbinskaya HPP, Ust-Kamenogorskaya HPP, Ekibastuzskaya-1 CCPP	Three phase two-winding transformer 630 MVA, 500 kV		OFAF	10	1980-1992, 2011
Ekibastuzskaya-1 CCPP	Three phase two-winding transformer 630 MVA, 500 kV		OFAF	1	2012
Yermakovskaya TPP, Industrial enterprises	Three phase two-winding transformer 400 MVA, 525 kV		OFAF	8	1972-2001
North transmission grid company	Single phase two-winding transformer 320 MVA, 750 kV	OLTC	ODAF	2	1986
Power transformers of voltages 800-1150 kV			total	15	
Akmolin electricity transmission company, Sarbaysk, North transmission grid company	Single phase three-winding autotransformer 667 MVA, 1150/500 kV	OCTC	OFAF	15	1979-1990
Special transformers			total	44	
Akyubinsk copper company, Kazzink	Three phase two-winding dry type transformer 0,63 MVA, 6 kV	OCTC	AN	2	2006
	Three phase two-winding dry type transformer 1 MVA, 6 kV	OCTC	AN	2	2006
Akyubinsk copper company, Kazzink	Three phase two-winding dry type transformer 1,6 MVA, 6 kV	OCTC	AN	3	2005-2006
Akyubinsk copper company, Kazzink	Three phase two-winding dry type transformer 2 MVA, 6 kV	OCTC	AN	5	2006
	Three phase two-winding dry type transformer 2,5 MVA, 6 kV	OCTC	AN	2	2006



CIS COUNTRIES

Special transformers (end)					
Kazzinc	Three phase two-winding dry type transformer 1 MVA, 10 kV	OCTC	AN	2	2005
	Three phase two-winding mine transformer 4 MVA, 10 kV	OCTC	ONAN	4	2006
Mittal Steel Temirtau	Three phase two-winding mine transformer 6,3 MVA, 10 kV	OCTC	ONAN	2	2008
Almaty Power Consolidated, Industrial enterprises, Astana power grid, Karaganda electricity transmission company, Energetic and communal services department of Astana	Three phase two-winding line regulating transformer 40 MVA, 10 kV	OLTC	ONAF	12	2005-2008, 2010-2012
Kazakhstan railway	Single phase three-winding railway transformer 25 MVA, 110 kV	OLTC	ONAF	5	2006, 2012
	Three phase two-winding railway transformer 40 MVA, 220 kV	OLTC	ONAF	2	2005
Industrial park s/s	Three phase two-winding metallurgical transformer 100 MVA, 220 kV	OLTC	ONAF	2	2012
Batys Transit Power Transmission Line	Three phase two-winding phase shifting OLTC transformer 400 MVA, 220 kV	OLTC	OFAF	1	2008

Electrical reactors			total	47	
KEGOC, Various s/s	Single phase shunt reactor 16 MVA, 35 kV, 330 A		ONAN	5	2007-2009
KEGOC	Three phase shunt reactor 50 MVA, 110 kV, 262.4 A		ONAN	1	2006
	Three phase shunt reactor 50 MVA, 220 kV, 131.2 A		ONAN	6	2005-2006, 2011-2012
	Three phase controllable reactor 180 MVA, 500 kV, 198 A		ONAF	2	2007
KEGOC, Mangistau electricity distribution network company	Three phase shunt reactor 20 MVA, 35 kV, 300 A		ONAN	5	2006-2008
Kumkol s/s	Three phase shunt reactor 20 MVA, 110 kV, 300 A		ONAN	1	2001
Aktogaj ore mining and processing enterprise	Three phase controllable reactor 25 MVA, 110 kV, 119.3 A		ONAF	1	2007
Zhambul s/s, Nura s/s, KEGOC	Single phase shunt reactor 60 MVA, 500 kV, 197.95 A		ONAN	10	2000-2005
KEGOC, Ulke s/s	Single phase shunt reactor 60 MVA, 500 kV, 198 A		ONAN	12	2007
Eurasian Natural Resources Corporation	Single phase controllable reactor 60 MVA, 500 kV		ONAF	4	2009

KYRGYZSTAN

Power transformers of voltages 110-220 kV			total	32	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Talas Gold Mining company	Three phase two-winding transformer 10 MVA, 110 kV	OLTC	ONAF	1	2006
Ipec Inshat	Three phase two-winding transformer 16 MVA, 110 kV	OLTC	ONAF	1	2005
Various s/s of Kyrgyzstan national grid system	Three phase three-winding transformer 25 MVA, 110 kV	OLTC	ONAF	3	2012
Various s/s of Kyrgyzstan national grid system	Three phase three-winding transformer 40 MVA, 110 kV	OLTC	ONAF	2	2012



CIS COUNTRIES

Power transformers of voltages 110-220 kV (end)					
Bishkekская TPP	Three phase two-winding transformer 125 MVA, 110 kV		OFAF	1	2001
Kambaratinskaya HPP-2	Three phase two-winding transformer 200 MVA, 110 kV		OFAF	1	2009
Kurpayskaya HPP	Three phase two-winding autotransformer 63 MVA, 220/110 kV		OFAF	2	1980
Various s/s	Three phase two-winding transformer 250 MVA, 220 kV	OLTC	OFAF	4	1980-1981
	Three phase two-winding autotransformer 125 MVA, 220/110 kV		OFAF	10	1971-1988
Bishkekская TPP	Three phase two-winding transformer 125 MVA, 220 kV	OLTC	OFAF	1	1975
Various s/s, Bishkekская TPP	Three phase two-winding autotransformer 200 MVA, 220/110 kV		OFAF	3	1970-1991
Tashkumyrskaya HPP	Three phase two-winding transformer 200 MVA, 220 kV	OLTC	OFAF	3	1985-1987
			total	11	
Power transformers of voltages 500-750 kV					
Various s/s	Single phase three-winding autotransformer 167 MVA, 500/220 kV	OLTC	OFAF	7	1977-1984
Toktogulskaya HPP	Three phase two-winding transformer 400 MVA, 525 kV		OFAF	4	1974-1975
			total	2	
Electrical reactors					
Toktogulskaya HPP	Single phase shunt reactor 60 MVA _r , 500 Kv, 198 A		ONAN	2	2004-2007

MOLDOVA

Power transformers of voltages 110-220 kV					
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Kishinev HPP-1, Kishinev municipal grids	Three phase two-winding transformer 16 MVA, 110 kV	OLTC	ONAF	2	2008
Moldelectrica	Three phase two-winding (split LV winding) transformer 25 MVA, 110 kV	OLTC	ONAF	1	2012
TPP-2	Three phase two-winding transformer 32 MVA, 110 kV	OLTC	ONAF	1	2009
Dubossarsk HPP	Three phase two-winding transformer (split LV winding) 40 MVA, 110 kV	OLTC	ONAF	1	2010
			total	5	
Power transformers of voltages 220-330 kV					
Various s/s, Moldavskaya TPP	Three phase three-winding autotransformer 125 MVA, 330/110 kV	OLTC	OFAF	3	1979-1980
Various s/s	Three phase three-winding autotransformer 200 MVA, 330/110 kV	OLTC	OFAF	13	1970-1991
Moldavskaya TPP	Three phase three-winding autotransformer 240 MVA, 330/220 kV	OCTC	OFAF	1	1972
	Three phase two-winding transformer 250 MVA, 330 kV		OFAF	7	1970-1991
			total	24	
Power transformers of voltages 330-400 kV					
Various s/s	Three phase three-winding autotransformer 250 MVA, 400/110 kV	OLTC	OFAF	2	1972-1985
Moldavskaya TPP	Single phase three-winding autotransformer 210 MVA, 400/330 kV	OLTC	OFAF	7	1973
	Three phase two-winding transformer 250 MVA, 420 kV		OFAF	2	1979-1991



CIS COUNTRIES

Special transformers			total	4	
Municipal enterprise	Three phase two-winding converter transformer 1 MVA, 10 kV	OCTC	ONAN	2	2006
Kishinev municipal grids	Three phase two-winding converter transformer 2 MVA, 10 kV	OCTC	ONAN	2	2005
Electrical reactors			total	1	
Moldelectrica	Single phase shunt reactor 55 MVAr, 400 kV, 227 A		ONAN	1	2006

RUSSIA

Power transformers of voltages 110-220 kV			total	2362	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s of North-west, Ural transmission grid companies, Distribution companies: Krasnoyarskenergo, Novgorodenergo, Industrial enterprises, Various s/s	Three phase two-winding transformer 2,5 MVA, 110 kV	OLTC	ONAN	12	2006-2009, 2012
Distribution companies: Irkutskenergo/Mamakan s/s, Sheya s/s, Tatenergo / Yelabuga s/s	Three phase two-winding transformer 6,3 MVA, 110 kV	OLTC	ONAN	4	2011-2012
Various s/s of North-West transmission grid company, Krasnodarskenergo distribution company, Industrial enterprises, Various s/s	Three phase three-winding transformer 6,3 MVA, 110 kV	OLTC	ONAN	11	2005-2009, 2011
Industrial enterprises, Orenburgenergo distribution company	Three phase three-winding transformer 10 MVA, 110 kV	OLTC	ONAF	7	2006-2009, 2011
Distribution companies: Lenenergo, Volgogradenergo, Komienergo; Various s/s of Central transmission grid company, Industrial enterprises	Three phase two-winding transformer 10 MVA, 110 kV	OLTC	ONAF	14	2006-2009, 2011
Tuapsinskiy NPZ	Three phase two-winding transformer 16 MVA, 110 kV		ONAF	2	2010-2011
Various s/s of South, North-West transmission grid company, Distribution companies: Irkutskenergo, Udmurtenergo, Lenenergo, Kalugaenergo, Russia railway, TGK-2/Vologodsk CHP, INTER RAO energy holding/ OGK-3/Dzhugbinskaya TPP, Industrial enterprises	Three phase two-winding transformer 16 MVA, 110 kV	OLTC	ONAF	28	2005-2010, 2012
Industrial enterprises: Tomskneft, Combined-cycle plant; East transmission grid company	Three phase three-winding transformer 16 MVA, 110 kV	OLTC	ONAF	7	2005-2009, 2012
GSR-Energy/CHP Kolpino city	Three phase two-winding (split LV winding) transformer 16 MVA, 110 kV	OLTC	ONAF	1	2012



CIS COUNTRIES

Power transformers of voltages 110-220 kV

Lenenergo distribution company, South transmission grid company	Three phase two-winding transformer 25 MVA, 110 kV	OLTC	ONAF	6	2009, 2011-2012
Distribution companies: Tyumenenergo, Krasnoyarskenergo, Lenenergo, Kalugaenergo, Yakutskenergo, Yantarenergo; Various s/s of North-West, South, Central transmission grid companies, Industrial enterprises: Surgutneftegas, Combined-cycle plant, Russia railway, TGC-4, Ural Energy Union, Salym-Petroleum, Various s/s	Three phase three-winding transformer 25 MVA, 110 kV	OLTC	ONAF	54	2005-2012
Mosenergo distribution company / CHP-12	Three phase two-winding auxiliary (split LV winding) transformer 25 MVA, 110 kV	OLTC	ONAF	1	2012
Various s/s, Industrial enterprise Surgutneftegas, Distribution companies: Udmurtenergo, Tyumenenergo, Lenenergo, Yantarenergo; Various s/s of South transmission grid company, Industrial enterprises	Three phase two-winding transformer (split LV winding) 25 MVA, 110 kV	OLTC	ONAF	25	2007-2011
RusHydro	Three phase two-winding transformer 25 MVA, 110 kV	OCTC	ONAF	3	2008
Industrial enterprises, Krasnoyarskaya HPP-2, Yuzhnaya TPP-22	Three phase two-winding transformer 32 MVA, 110 kV	OLTC	ONAF	3	2005-2009
Various s/s of South, Central, North-West, Ural transmission grid companies, Moscow distribution company, Distribution companies: Lenenergo, Tyumenenergo, Novosibirskenergo, Nizhnovenergo; Ekaterinburg power network, Industrial enterprises: Salym Petroleum, OGK-2/Serovskaya s/s, Mosenergo distribution company / CHP-16	Three phase two-winding transformer (split LV winding) 40 MVA, 110 kV	OLTC	ONAF	61	2005-2012
Industrial enterprises	Three phase two-winding transformer 40 MVA, 110 kV	OCTC	ONAF	9	2008, 2011
Permskaya TPP-6	Three phase two-winding transformer 40 MVA, 110 kV		OFAF	1	2009
Moscow distribution company, IDGS, Industrial enterprises	Three phase two-winding transformer 40 MVA, 110 kV	OLTC	ONAF	4	2008
Mosenergo generation company, Distribution companies: Tyumenenergo, Kirovenergo, Novosibirskenergo, Udmurtenergo, Krasnoyarskenergo, Orenburgenergo, Various s/s of South, Central, North-West transmission grid companies, Industrial enterprises: Rosneft, Vankorneft	Three phase three-winding transformer 40 MVA, 110 kV	OLTC	ONAF	83	2005-2012



CIS COUNTRIES

Power transformers of voltages 110-220 kV

Tyumenenergo distribution company	Three phase three-winding transformer 40 MVA, 110/35/6,6 kV	OLTC	ONAF	14	2007
	Three phase three-winding transformer 40 MVA, 110/35/11 kV	OLTC	ONAF	1	2007
Novosibirskenergo distribution company, IDGS, Pokrovsk mine, industrial enterprise Surgutneftegas	Three phase three-winding transformer 40 MVA, 110 kV	OLTC	ONAF	8	2012
Distribution companies: Lenenergo, Ryazanenergo, Moscow; Severstal, Various s/s of Central, North-West transmission grid company, Industrial enterprises	Three phase two-winding transformer (split LV winding) 63 MVA, 110 kV	OLTC	ONAF	26	2006-2009, 2011
Permskaya TPP-6, TGK-2/Vologodsk CHP	Three phase two-winding transformer 63 MVA, 110 kV		OFAF	3	2009-2010
Kalugaenergo distribution company, Industrial enterprises	Three phase two-winding transformer 63 MVA, 110 kV	OLTC	OFAF	3	2008, 2010
Tuapsinskiy NPZ	Three phase two-winding transformer 63 MVA, 110 kV		ONAF	9	2010-2011
Lenenergo distribution company, Combined-cycle plant, Various s/s of Central, East and Siberia transmission grid companies, Industrial enterprises: Orsko-Khalilovskiy metallurgical works, Surgutneftegas	Three phase three-winding transformer 63 MVA, 110 kV	OLTC	ONAF	28	2002-2012
Gazprom/Adler TPP, Mosenegero generation company/TPP-22, SUEK/Barnaul CHP	Three phase two-winding transformer 80 MVA, 110 kV		OFAF	7	2010-2012
Magnitogorsk Metallurgical plant, North-West transmission grid company	Three phase two-winding transformer 80 MVA, 110 kV	OCTC	ONAF	3	2008
Distribution companies: Moscow, Lenenergo, Mosenergo generation company	Three phase two-winding transformer (split LV winding) 80 MVA, 110 kV	OLTC	OFAF	4	2008-2010
Moscow distribution company	Three phase three-winding transformer (split LV winding) 80 MVA, 110 kV	OLTC	OFAF	2	2008
Sverdlovenegero distribution company, Yeliseevskaya s/s, Various s/s of North-West, Siberia transmission grid companies, Industrial enterprises	Three phase two-winding (split LV winding) transformer 80 MVA, 110 kV	OLTC	ONAF	10	2006-2011
Omskenergo distribution company, Mosenergo generation company	Three phase three-winding transformer 80 MVA, 110 kV	OLTC	OFAF	3	2005-2009
Distribution companies: Bashkirenergo, Irkutskenergo, Lenenergo, Omskenergo, Penzaenergo, Yarenergo, Kuzbassenergo, Novosibirskenergo; Various s/s of North-West, Siberia transmission grid companies	Three phase three-winding transformer 80 MVA, 110 kV	OLTC	ONAF	25	1972-2009, 2011-2012



CIS COUNTRIES

Power transformers of voltages 110-220 kV

Omskenergo distribution company	Three phase two-winding transformer 125 MVA, 110 kV	OCTC	OFAF	1	1992
Novosibirskenergo distribution company, Mosenergo generation company	Three phase two-winding transformer 125 MVA, 110 kV		OFAF	2	2004-2009
South transmission grid company	Three phase two-winding (split LV winding) transformer 125 MVA, 110 kV	OLTC	ONAF	1	2012
Distribution companies: Irkutskenergo, Mosenergo, South transmission grid companies	Three phase two-winding transformer (split LV winding) 125 MVA, 110 kV	OLTC	OFAF	5	1977, 1979, 2008-2009
Ivanovskaya HPP	Three phase two-winding transformer 160 MVA, 110 kV	OCTC	OFAF	3	2004-2005
Industrial enterprises	Three phase two-winding transformer 160 MVA, 110/35kV	OLTC	OFAF	2	2007
TGK-8/Krasnodar CHP	Three phase two-winding transformer 180 MVA, 110 kV		OFAF	2	2010-2011
Generation and Distribution companies: Krasnoyarskaya-2 TPP, Nevinomysskaya TPP, Nazarovskaya TPP, Berezovskaya CCPP, Volzhskaya TPP, Irkutskaya TPP, Krasnoyarskaya TPP, Bashkirenergo, Volgogradenergo, Irkutskenergo, Krasnoyarskenergo, Kuzbassenergo, Lipetskenegero, Mosenergo, Nizhnovenergo, Permenergo, Tatenergo, Tomskenergo, Tyumenenergo, Ulyanovskenergo, Chuvashenergo, Dzerjinskaya TPP, Yuzhnaya TPP-22	Three phase two-winding transformer 200 MVA, 110 kV		OFAF	65	1973-2009, 2011
Kaliningradskaya TPP, OGGK-2, Tverskaya TPP-3, ENEL-OGK-5/ Nevinomysskaya TPP	Three phase two-winding transformer 200 MVA, 110 kV	OCTC	OFAF	5	2003-2008, 2012
Generation and Distribution companies: Zainskaya TPP, Cheliabinskaya TPP, Ulyanovskaya TPP, Leningradskaya TPP, Gusinoozerskaya TPP, Haranorskaya TPP Altayenergo, Irkutskenergo, Karelenegero, Lenenergo, Novosibirskenergo, Omskenergo, Permenergo, Pskovenergo, Tatenergo, Tyumenenergo, Ulyanovskenergo, Khabarovskenergo, Cheliabenergo, Yakutskenergo	Three phase two-winding transformer 250 MVA, 110 kV		OFAF	44	1977-1998
Industrial enterprises	Three phase two-winding transformer 250 MVA, 110/35 kV	OCTC	OFAF	1	2006
Lenenergo distribution company	Three phase two-winding transformer 400 MVA, 110 kV	OCTC	OFAF	1	1980
GSR-Energy/CHP Kolpino city	Three phase two-winding (split LV winding) transformer 200 MVA, 121 kV	OCTC	OFAF	1	2012
Kolskaya NPP	Three phase two-winding transformer (split LV winding) 32 MVA, 150 kV	OLTC	ONAF	1	1973



CIS COUNTRIES

Power transformers of voltages 110-220 kV

Kolenergo distribution company, Industrial enterprises	Three phase three-winding transformer 63 MVA, 150 kV	OLTC	ONAF	4	2008, 2010
	Three phase two-winding transformer (split LV winding) 63 MVA, 150 kV	OLTC	ONAF	2	1993-1995
Distribution companies: Kolenergo, Magadanenergo	Three phase three-winding autotransformer 90 MVA, 150/110 kV	OCTC	ONAF	6	1975-1982
Kolenergo distribution company	Three phase two-winding transformer 125 MVA, 150 kV	OCTC	OFAF	2	1972
	Three phase two-winding transformer 250 MVA, 150 kV	OCTC	ONAF	1	1984
Volgodonskaya NPP, South transmission grid company	Three phase two-winding transformer 5 MVA, 220 kV	OLTC	ONAN	2	2005, 2012
OGK-2 / Serovskaya s/s	Three phase two-winding auxiliary (split LV winding) transformer 25 MVA, 220 kV	OLTC	ONAF	1	2012
South transmission grid company	Three phase two-winding transformer 25 MVA, 220 kV	OLTC	ONAF	1	2012
Krasnoyarskenergo distribution company, Bureyskaya HPP	Three phase three-winding transformer 25 MVA, 220 kV	OLTC	ONAF	3	1984-2008
Novocherkasskaya HPP, Krasnoyarsk TPP-3	Three phase two-winding transformer 32 MVA, 220 kV	OLTC	ONAF	5	2008, 2010, 2011
SUEK / Novokuznetsk CCGT	Three phase two-winding (split LV winding) transformer 32 MVA, 220 kV	OLTC	ONAF	1	2012
OGK-1/Nizhneartovskaya CCPP	Three phase two-winding auxiliary (split LV winding) transformer 32 MVA, 220 kV	OLTC	ONAF	1	2012
Cherepetskaya GRES, Abinsk Electric Steel Works Ltd, South transmission grid company	Three phase two-winding (split LV winding) transformer 40 MVA, 220 kV	OLTC	ONAF	3	2011-2012
TGC-13/Krasnoyarsk CHP-3	Three phase two-winding auxiliary transformer (split LV winding) 40 MVA, 220 kV	OLTC	ONAF	4	2008-2010
South transmission grid company	Three phase two-winding transformer 40 MVA, 220 kV	OLTC	ONAF	2	2009
Central transmission grid company	Single phase three-winding transformer (split LV winding) 50 MVA, 220 kV	OCTC	ONAF	1	2010
Distribution companies: Amurenergo, Bashkirenergo, Buriatenergo, Volgogradenergo, Irkutskenergo, Karelenegero, Lenenergo, Magadanenergo, Marienergo, Nizhnovenergo, Novosibirskenergo, Permenergo, Tverenergo, Tomskenergo, Tumenenergo, Udmurtenergo, Khabarovskenergo, Chitaenergo, Yarenergo, East transmission grid company	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	OFAF	50	1979-1995, 2010
Slavenergo distribution company	Three phase two-winding transformer 63 MVA, 220 kV	OLTC	ONAF	2	2008
Central transmission grid company	Three phase two-winding transformer (split LV winding) 63 MVA, 220 kV	OLTC	ONAF	4	2008, 2010, 2011
Moscow distribution company	Three phase three-winding transformer 63 MVA, 220 kV	OLTC	OFAF	2	2007-2008
South, North-West, Siberia transmission grid companies, Far Eastern energy company	Three phase three-winding autotransformer 63 MVA, 220	OLTC	OFAF	8	2009, 2012
East transmission grid company	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	ONAF	4	2010



CIS COUNTRIES

Power transformers of voltages 110-220 kV

Rybinskaya HPP	Three phase three-winding autotransformer 63 MVA, 220 kV	OLTC	ONAF	3	2009, 2011
Kamskaya HPP	Single phase two-winding transformer 63,3 MVA, 220 kV		OFAF	4	2006-2009
Distribution companies: Kuzbassenergo, Irkutskenergo, Sahalinenergo; Industrial enterprises	Three phase three-winding transformer (split LV winding) 63,3 MVA, 220 kV	OCTC	OFAF	3	2007-2008
	Single phase three-winding autotransformer 66 MVA, 220 kV	OCTC	ONAF	95	1970-2001
	Single phase two-winding transformer 66,67 MVA, 220 kV	OCTC	ONAF	95	1970-2001
RUSAL	Single phase three-winding transformer 66,67 MVA, 220/11 kV	OCTC	ONAF	2	2008
	Single phase three-winding transformer 66,67 MVA, 230/11 kV	OCTC	ONAF	2	2008
Distribution companies: Irkutskenergo, Magadanenergo	Three phase two-winding transformer 80 MVA, 220 kV		ONAF	2	1976-1978
North-West transmission grid company	Three phase two-winding transformer (split LV winding) 80 MVA, 220 kV	OLTC	OFAF	4	2008-2010
Moscow distribution company	Three phase two-winding transformer 80 MVA, 220 kV	OLTC	OFAF	2	2009
Uglichskaya HPP, Adler TPP, RusHydro / Rybinskaya HPP	Three phase two-winding transformer 80 MVA, 220 kV	OCTC	ONAF	7	2008, 2011, 2012
Krasnoyarskenergo distribution company	Three phase two-winding transformer 90 MVA, 220 kV		ONAF	5	1970-1971
Distribution companies: Krasno- yarskenergo, Mosenergo; Moscow distribution company, Central, North-West, South transmission grid companies, Industrial enterprises: RUSAL/ Taishet aluminum plant, Bogu- chany Aluminium plant	Three phase two-winding transformer (split LV winding) 100 MVA, 220 kV	OLTC	OFAF	39	1982-2012
Moscow distribution company, Various s/s of Central, South transmission grid companies	Three phase two-winding transformer (split LV winding) 100 MVA, 220 kV	OLTC	ONAF	4	2008-2009
Viluyuskaya HPP, Novosibirsk- energo distribution company, Vilyuskaya HPP-3, INTER RAO energy holding/OGK-3/ Dzhugbinskaya TPP, Mosenergo distribution company/CHP-12	Three phase two-winding transformer 125 MVA, 220 kV	OCTC	OFAF	6	2004-2006, 2012
Klyuchiki s/s, Krasnodarskaya TPP, Distribution companies: Tyumenenergo, Irkutskenergo, Moscow; Westrn Siberia, North-West, South, Central, East, Siberia transmission grid companies	Three phase three-winding autotransformer 125 MVA, 220 kV	OLTC	OFAF	21	2003-2009
Various s/s of Central transmission grid company	Three phase three-winding autotransformer 125 MVA, 220 kV	OLTC	ONAF	4	2009
West-Siberia transmission grid company	Single phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	OFAF	2	2008



CIS COUNTRIES

Power transformers of voltages 110-220 kV

<p>Generation and Distribution companies: Gusinoozerskaya TPP, Haranorskaya TPP, Amurenergo, Altayenergo, Archenergo, Astrahanenergo, Bashkirenergo, Brianskenergo, Vladimirenergo, Vologdaenergo, Volgogradenergo, Voronezhenergo, Dagenenergo, Ivenergo, Irkutskenergo, Kalugaenergo, Karelenegero, Komienegero, Kostromaenergo, Kubanenergo, Krasnoyarskenergo, Kuzbassenergo, Kurganenergo, Lenenergo, Magadanenergo, Marienergo, Mordovenergo, Mosenergo, Nizhnovenergo, Novosibirskenergo, Omskenergo, Orelenergo, Penzaenergo, Permenergo, Rostovenergo, Riazanenergo, Saratovenergo, Sverdlovenegero, Smolenskenergo, Tambovenergo, Tatenergo, Tverenergo, Tomskenergo, Tulaenergo, Tyumenenergo, Udmurtenergo, Ulyanovskenergo, Khabarovskenergo, Cheliabenergo, Chitaenergo, Chuvashenergo, Yakutskenergo, Yarenergo; Various s/s of Volga, Southern, Central, North-West, West-Siberian transmission grid companies, Industrial enterprises</p>	<p>Three phase three-winding autotransformer 125 MVA, 220/110 kV</p>	<p>OLTC</p>	<p>OFAF</p>	<p>683</p>	<p>1971-2008, 2010-2012</p>
<p>Siberia transmission grid company/Sputnik s/s; Kostroma s/s</p>	<p>Three phase three-winding autotransformer 125 MVA, 220/110 kV</p>	<p>OLTC</p>	<p>ONAF</p>	<p>3</p>	<p>2004, 2011-2012</p>
<p>Generation and Distribution companies: Uzhnouralskaya TPP, Bashkirenergo, Dalenergo, Karelenegero, Kubanenergo, Mosenergo, Novosibirskenergo, Sverdlovenegero, Tatenergo, Tulaenergo, Chitaenergo, Yakutskenergo; Various s/s of Siberian distribution system</p>	<p>Three phase two-winding transformer 125 MVA, 220 kV</p>		<p>OFAF</p>	<p>32</p>	<p>1978-2002</p>
<p>Various s/s of Central transmission grid company</p>	<p>Three phase three-winding autotransformer 150 MVA, 220 kV</p>	<p>OLTC</p>	<p>OFAF</p>	<p>5</p>	<p>2009</p>
<p>Central transmission grid company</p>	<p>Three phase three-winding autotransformer 150 MVA, 220/110 kV</p>	<p>OLTC</p>	<p>ONAF</p>	<p>4</p>	<p>2010</p>
<p>Central transmission grid company</p>	<p>Three phase three-winding autotransformer 150 MVA, 220/110 kV</p>	<p>OLTC</p>	<p>OFAF</p>	<p>1</p>	<p>2010</p>
<p>Krasnoyarskenergo distribution company, Industrial enterprises</p>	<p>Three phase two-winding transformer (split LV winding) 160 MVA, 220 kV</p>		<p>OFAF</p>	<p>24</p>	<p>1987-1999</p>



CIS COUNTRIES

Power transformers of voltages 110-220 kV

Sverdlovenenergo distribution company, Amurmetal, Ivanovskaya HPP	Three phase two-winding transformer 160 MVA, 220 kV	OLTC	OFAF	5	2003-2008
Sugres CAPP	Three phase two-winding transformer 160 MVA, 220 kV		ONAF	1	2009
Siberia transmission grid company/Mogocha s/s	Three phase two-winding transformer 160 MVA, 220 kV	OLTC	OFAF	4	2011
Distribution companies: Brianskenergo, Sverdlovenenergo, Tyumenenergo	Three phase three-winding lightning-proof autotransformer 180 MVA, 220/110 kV	OCTC	OFAF	8	1970-1989
Tambovenenergo distribution company	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OLTC	OFWF	1	1977
Chuvashenergo distribution company	Three phase two-winding transformer 200 MVA, 220 kV	OCTC	OFWF	1	1984
Central transmission grid company	Three phase two-winding (split LV winding) transformer 200 MVA, 220 kV	OLTC	OFAF	4	2012
Generation and Distribution companies: Krasnoyarskaya-2 TPP, Nazarovskaya TPP, Kubanenergo, Omskenergo, Permenergo, Rostovenergo, Saratovenergo, TGC-2, TGC-8/Krasnodar CHP, SUEK/Novokuznetsk CCGT, Bashkirenergo/Novo-Salavatskaya CHP, Mosenergo/CHP-12, CHP-16, CHP-27, Industrial enterprises	Three phase two-winding transformer 200 MVA, 220 kV	OCTC/-	OFAF	26	1978-1988, 2004, 2009-2012
Generation and Distribution companies: Belivskaya TPP, Nazarovskaya TPP, Novo-Voronezhskaya NPP, Altayenergo, Bashkirenergo, Brianskenergo, Buriatenergo, Cheliabenergo, Vologdaenergo, Volgogradenergo, Voronezhenergo, Ivenergo, Irkutskenergo, Kalugaenergo, Khabarovskenergo, Kubanenergo, Krasnodarskenergo, Krasnoyarskenergo, Kuzbassenergo, Kurskenergo, Kurganenergo, Lenenergo, Lipetskenergo, Mosenergo, Nizhnovenergo, Novosibirskenergo, Permenergo, Rostovenergo, Saratovenergo, Sverdlovenenergo, Smolenskenergo, Tambovenenergo, Tatenergo, Tomskenergo, Tulaenergo, Ulyanovskenergo, Yarenergo, Various s/s of Siberia and Central transmission grid companies Industrial enterprises	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OLTC	OFAF	237	1970-2006, 2010-2012
Novosibirskenergo distribution company, OGK-4, Various s/s of Central, Siberia, South, Ural transmission grid companies	Three phase three-winding autotransformer 200 MVA, 220 kV	OLTC	OFAF	14	2003-2009



CIS COUNTRIES

Power transformers of voltages 110-220 kV

Adler TPP	Three phase two-winding autotransformer 200 MVA, 220/110 kV	OLTC	OFAF	1	2011
Generation and Distribution companies: Primorskaya TPP, Beloyarskaya NPP, Archenergo, Mosenergo, Novosibirskenergo, Omskenergo, Saratovenergo, Tatenergo, Lipetskenergo, Sverdlovenegero, Cheliabenergo	Three phase three-winding autotransformer 240 MVA, 220/110 kV	OCTC	OFAF	16	1970-1976
Generation and Distribution companies: Zainskaya TPP, Novo-Voronezhskaya NPP, Novosibirskaya-5 TPP, Votkinskaya HPP, Mosenergo, Novosibirskenergo, Omskenergo, Kuzbassenergo, Smolenskenergo, Sverdlovskenegero, Tyumenenergo, SUEK, Khabarovskaya TPP-3, Magnitogorskiy plant	Three phase two-winding transformer 250 MVA, 220 kV		OFAF	44	1984-2009, 2012
Generation and Distribution companies: Saratovskaya HPP, Zeyskaya HPP, Magadanenergo, Mosenergo	Three phase two-winding transformer 250 MVA, 220 kV		OFAF	9	1975-1981
Khabarovskenergo distribution company	Three phase three-winding transformer 250 MVA, 220 kV	OLTC	ONAF	1	1983
Generation and Distribution companies: Tom-Usinskaya TPP, Troitskaya TPP, Yuzhnouralskaya TPP, Archenergo, Irkutskenergo, Kuzbassenergo, Mosenergo, Omskenergo, Permenergo, Rostovenergo, Saratovenergo, Sverdlovenegero, Tatenergo, Tulaenergo, Cheliabenergo, Kalugaenergo distribution companies; Various s/s of Moscow distribution company, Industrial enterprises, Various s/s of Central, Ural and South transmission grid companies	Three phase three-winding autotransformer 250 MVA, 220/110 kV	OLTC	OFAF	153	1978-2012
Novosibirskaya TPP, Votkinskaya HPP	Three phase three-winding autotransformer 250 MVA, 220/121 kV	OLTC	OFAF	10	1984-2000
Cherepetskaya GRES	Three phase two-winding transformer 270 MVA, 220 kV		OFAF	2	2011
SUEK / Belovskaya CCPP	Three phase two-winding transformer 315 MVA, 220 kV		OFAF	2	2012
Sugres CCPP	Three phase two-winding transformer 333 MVA, 220 kV		ONAF	1	2009
Generation and Distribution companies: Konakovskaya TPP, Novocherkasskaya TPP, Cherepetskaya TPP, Riazanskaya TPP, Kostromskaya TPP, Mosenergo, TGK-8/Krasnodar CHP, Bashkirenergo/ Novo-Salavatskaya CHP	Three phase two-winding transformer 400 MVA, 220 kV		OFAF	22	1970-2001, 2010, 2012



CIS COUNTRIES

Power transformers of voltages 110-220 kV (end)

Generation and Distribution companies: Troitskaya TPP, Refinskaya TPP, Chuvashenergo	Three phase two-winding transformer 400 MVA, 220 kV	OCTC	OFWF	4	1971-1997, 2010
Boguchanskaya HPP	Three phase two-winding transformer 400 MVA, 220 kV		OFWF	3	2011
OGK-4/YAJVA CCPP	Three phase two-winding transformer 500 MVA, 220 kV		OFAF	1	2010
Nyaganskaya CCPP, OGK-2/Serovskaya s/s	Three phase two-winding transformer 520 MVA, 220 kV	OCTC	OFAF	2	2012
Nyaganskaya GRES	Three phase two-winding transformer 520 MVA, 220 kV		OFAF	1	2011
Generation and Distribution companies: Krasnoyarskaya HPP, Irkutskenergo	Three phase two-winding transformer 630 MVA, 220 kV	OCTC	OFWF	5	1970-1982
Balakovskaya NPP, Yuzhno-ural'skaya GRES-2 (CCPP)	Three phase two-winding transformer 630 MVA, 220 kV		ODWF	4	1984, 2011
Nizhneartovskaya TPP, Permskaya TPP	Three phase two-winding transformer 1000 MVA, 220 kV	OCTC	ODWF	3	1985-1991

Power transformers of voltages 220-330 kV

total 824

Khabarovskenergo distribution company	Three phase two-winding autotransformer 63 MVA, 230/121 kV	OLTC	OFAF	2	1996-1998
Volgogradenergo distribution company, Aluminium plants	Single phase two-winding transformer 66 MVA, 230 kV	OCTC	ONAF	7	1999-2000
Zeyskaya HPP	Three phase three-winding transformer 80 MVA, 230 kV	OLTC	OFAF	1	2001
Generation and Distribution companies: Berezovskaya CCPP, Yuzhno-Sahalinskaya TPP, Irkutskenergo, Tumenergo, Bashkirenergo, Khabarovskenergo; Syktykvar s/s, Industrial enterprises	Three phase three-winding autotransformer 125 MVA, 230/121 kV	OLTC	OFAF	346	1984-1999
Borisovo s/s, Volzhskaya s/s, Mikhaylovskaya s/s and others, Generation and Distribution companies: Novovoronezhskaya NPP, Kamskaya HPP, Nazarovskaya TPP, Mosenergo	Three phase three-winding autotransformer 200 MVA, 230/121 kV	OLTC	OFAF	84	1984-2001
Nazarovskaya TPP	Three phase three-winding autotransformer 200 MVA, 230/110 kV	OLTC	OFAF	1	1997
Argazak'skaya s/s, Volga s/s, Distribution companies: Nizhenergo, Karelergo	Three phase three-winding autotransformer 250 MVA, 230/115 kV	OLTC	OFAF	7	1995-1996
Distribution companies: Mosenergo, Tuls'kaya	Three phase three-winding autotransformer 250 MVA, 230/110 kV	OLTC	OFAF	4	1997
Biyskaya TPP, Chitinskaya TPP and others	Three phase two-winding transformer 125 MVA, 242 kV	OCTC	OFAF	20	1984-1994
Bratskaya HPP	Three phase two-winding transformer 300 MVA, 242 kV		OFWF	9	1991-2000
Riazanskaya TPP	Three phase two-winding transformer 400 MVA, 242 kV		OFAF	1	2000



CIS COUNTRIES

Power transformers of voltages 220-330 kV

Balakovskaya NPP	Three phase two-winding transformer 630 MVA, 242 kV		OFWF	1	1989
Nizhneartovskaya HPP	Three phase two-winding transformer 1000 MVA, 242 kV		OFWF	1	1990
Kalininskaya NPP, Kurskaya NPP, Smolenskaya NPP, Leningradskaya NPP-2	Three phase two-winding transformer (split LV winding) 63 MVA, 330kV	OLTC	OFAF	14	1980-1989, 2008, 2012
Rosenergoatom / Leningradskaya NPP-2	Three phase two-winding (split LV winding) transformer 80 MVA, 330 kV	OLTC	ONAF	2	2012
Generation and Distribution companies: Stavropolskaya TPP, Belgorodenergo, Grozenergo, Dagenergo, Kolenergo, Lenenergo, Pskovenergo; Various s/s of North-Western, Central and South transmission grid companies	Three phase three-winding autotransformer 125 MVA, 330/110 kV	OLTC	OFAF	64	1970-2005, 2011
South transmission grid company	Three phase three-winding autotransformer (split LV winding) 125 MVA, 330 kV	OLTC	ONAF	1	2009
North-west transmission grid company	Three phase three-winding autotransformer 125 MVA, 330/110 kV	OLTC	ONAF	1	2005
Various s/s of South transmission grid company	Three phase three-winding autotransformer 125 MVA, 330 kV	OLTC	OFAF	5	2003-2009
South transmission grid company	Three phase two-winding transformer 125 MVA, 330 kV	OLTC	ONAF	1	2009
Various s/s of Central transmission grid company	Three phase three-winding autotransformer 150 MVA, 330/110 kV	OLTC	ONAF	2	2006
Various s/s of Central transmission grid company	Three phase three-winding autotransformer 150 MVA, 330/110 kV	OLTC	OFAF	2	2007
	Three phase three-winding autotransformer 195 MVA, 330/110 kV	OLTC	OFAF	2	2005-2008
ENEL-OGK-5/ Nevinomysskaya TPP	Three phase two-winding transformer 200 MVA, 330 kV	OCTC	OFAF	3	1971, 1978, 2012
Kaliningradskaya TPP-2, Various s/s of North-West transmission grid company	Three phase three-winding autotransformer 200 MVA, 330 kV	OLTC	OFAF	5	2009
Various s/s of North-West transmission grid company	Three phase three-winding autotransformer 200 MVA, 330 kV	OLTC	ONAF	3	2005, 2010
Generation and Distribution companies: Kirishskaya-19 TPP, Stavropolskaya TPP, Grozenergo, Kurskenergo, Lenenergo, Yantarenergo, Leningradskaya NPP; Industrial enterprises, Various s/s of North-West, Central and South transmission grid companies	Three phase three-winding autotransformer 200 MVA, 330/110 kV	OLTC	OFAF	123	1970-2008, 2010-2012
Central transmission grid company	Three phase three-winding autotransformer 200 MVA, 330/110 kV	OLTC	ONAF	4	2007, 2010
	Three phase three-winding autotransformer 250 MVA, 330/110 kV	OLTC	ONAF	2	2010



CIS COUNTRIES

Power transformers of voltages 220-330 kV (end)

Generation and Distribution companies: Konakovskaya TPP, Novocherkasskaya TPP, Karelergo, Lenenergo, Various s/s of North-West, Central and South transmission grid companies	Three phase three-winding lightning-proof autotransformer 240 MVA, 330/220 kV	OCTC	OFAF	33	1970-1983
Kolenergo distribution company	Three phase three-winding autotransformer 250 MVA, 330/150 kV	OCTC	OFAF	8	1970-1987
	Three phase three-winding autotransformer 250 MVA, 330/150 kV	OLTC	OFAF	5	1985-1992
Lenenergo distribution company, Various s/s of North-West transmission grid company	Three phase three-winding autotransformer 250 MVA, 330/220 kV	OLTC	OFAF	6	1989-2008, 2011
	Three phase three-winding autotransformer 250 MVA, 330 kV	OLTC	OFAF	4	2009
Various s/s of West transmission grid company	Three phase two-winding transformer 250 MVA, 330 kV		OFAF	22	1972-2005, 2011
Generation and distribution companies: Kolskaya NPP, Irganayskaya TPP, Dagenergo, Lenenergo, Pskovenergo, Kolenergo, North-West TPP	Three phase two-winding transformer 400 MVA, 330 kV		ONAF	5	1974-1984
Dagenergo distribution company	Three phase two-winding transformer 400 MVA, 330 kV	OCTC/-	OFAF	12	1970-1992
Stavropolskaya TPP, Kirishskaya-19 TPP	Three phase two-winding transformer 630 MVA, 330 kV		OFAF	10	1972-1992
Kurskaya NPP, Leningradskaya NPP, Smolenskaya NPP	Three phase two-winding transformer 1250 MVA, 330 kV		OFAF	1	1982
Kalininskaya NPP			OFAF		

Power transformers of voltages 330-400 kV

total 27

Volzhskaya HPP	Single phase three-winding transformer 135 MVA, 400 kV	OLTC	OFAF	17	1982-1988
Vyborgskaya s/s	Single phase two-winding autotransformer 167 MVA, 400/330 kV		ONAF	4	2001
Various s/s of Central transmission grid company	Single phase three-winding transformer 175 MVA, 400 kV	OLTC	OFAF	6	1974-1976

Power transformers of voltages 500-750 kV

total 1199

Mosenergo distribution company	Single phase three-winding autotransformer 90 MVA, 500/110 kV	OCTC	OFAF	1	1973
	Single phase two-winding transformer (split LV winding) 135 MVA, 500 kV	OCTC	OFAF	13	1987-1990
Volzhskaya HPP	Single phase two-winding transformer (split LV winding) 135 MVA, 500 kV		OFAF	3	1978-1979
Various s/s of Central transmission grid company	Single phase three-winding autotransformer 135 MVA, 500/220 kV	OCTC	OFAF	1	1974
	Single phase three-winding autotransformer 135 MVA, 500/110 kV	OLTC	OFAF	12	1995-2005
Bogulminskie distribution systems, Various s/s of Central transmission grid company	Three phase two-winding transformer 160 MVA, 500 kV		OFAF	1	2009
OGK-6					



CIS COUNTRIES

Power transformers of voltages 500-750 kV

Barnaulskaya s/s	Single phase three-winding autotransformer 167 MVA, 500 kV	OCTC	OFAF	1	2003
Boguchanskaya HPP, Taishet-2 s/s, Various s/s of Central, East, Ural, West Siberia transmission grid companies	Single phase three-winding autotransformer 167 MVA, 500 kV	OLTC	OFAF	26	2009
Generation and Distribution companies: Zainskaya TPP, Konakovskaya TPP, Primorskaya TPP, Nizhneartovskaya TPP, Novo-Voronezhskaya NPP, Gusinozerskaya TPP, Stavropolskaya TPP, Volzhskaya HPP, Boguchanskaya HPP, Saratovskaya HPP, Surgutskaya TPP, Zeyskaya HPP, Bashkirenergo, Irkutskenergo, Komienergo, Mosenergo, Tatenergo, Tyumenenergo, Chuvashenergo; Various s/s of North-Westn, Central, South, East, Volga, Siberia, West-Siberia and Ural distribution systems, Industrial enterprises	Single phase three-winding autotransformer 167 MVA, 500/220 kV	OLTC	OFAF	565	1970-2006, 2007-2008, 2010-2012
West-Siberia transmission grid company	Single phase three-winding autotransformer 167 MVA, 500/220/35 kV	OLTC	OFAF	6	2008
Smolenskaya NPP, Budionovskaya s/s, Stavropolskaya s/s, Stariy Oskol s/s	Single phase three-winding autotransformer 167 MVA, 500/330 kV	OLTC	OFAF	24	1977-1996
Konakovskaya TPP	Three phase two-winding transformer 206 MVA, 500 kV		OFAF	1	1974
Zainskaya TPP, Nazarovskaya TPP	Single phase two-winding lightning-proof transformer 210 MVA, 500 kV		OFAF	8	1970-1974
TGK-13/Nazarovskaya TPP	Single phase two-winding transformer (split LV winding) 210 MVA, 500 kV	OCTC/-	OFAF	4	2010, 2012
Bratskaya TPP	Single phase two-winding transformer (split LV winding) 210 MVA, 500 kV		OFAF	9	1989-1995
Tatenergo distribution company / Yelabuga s/s	Three phase two-winding autotransformer 250 MVA, 500/110 kV	OLTC	OFAF	2	2012
Generation and Distribution companies: Krasnoyarskaya-2 TPP, Karmanovskaya TPP, Bashkirenergo, Mosenergo, Tatenergo, Tumenenergo; Various s/s of Central and Siberia transmission grid companies	Three phase three-winding autotransformer 250 MVA, 500/110 kV	OLTC	OFAF	61	1971-2008, 2010
Zeyskaya HPP, Mosenergo distribution company	Three phase two-winding transformer 250 MVA, 500 kV		OFAF	10	1976-1994
Surgutskaya HPP-2, OGGK-1/ Nizhneartovskaya CCPP	Three phase two-winding transformer 250 MVA, 500 kV		OFAF	2	2007, 2012
Various s/s of Central transmission grid company	Three phase three-winding autotransformer 250 MVA, 500 kV	OLTC	OFAF	1	2009



CIS COUNTRIES

Power transformers of voltages 500-750 kV

Irkutskenergo distribution company / Irkutskaya s/s	Single phase three-winding autotransformer (split LV winding) 250 MVA, 500/220 kV	OLTC	OFAF	1	2012
Irkutskenergo distribution company	Single phase three-winding autotransformer 250 MVA, 500/220 kV	OLTC	OFAF	1	2010
RusHydro / Zagorskaya HPSPP-2	Three phase two-winding transformer 265 MVA, 500 kV		OFAF	2	2012
Generation and Distribution companies: Reftinskaya TPP, Kostromskaya TPP, Permskaya TPP, Balakovskaya NPP, Ust-Ilyimskaya HPP, Bratskaya TPP, Irkutskenergo, Orenburgenergo, Samaraenergo, Saratovenergo, Voronezhenergo, Tatenergo, Mosenergo; Various s/s of Volga, Volga, Siberian and Ural distribution systems	Single phase three-winding autotransformer 267 MVA, 500/220 kV	OLTC	OFAF	135	1970-1997, 2010-2012
Novokuznetskaya s/s	Single phase three-winding autotransformer 267 MVA, 500 kV	OCTC	OFAF	1	2003
Ural transmission grid company	Three phase three-winding autotransformer 267 MVA, 500/220 kV	OLTC	OFAF	1	2008
Rosenergoatom / Belayarskaya NPP	Single phase two-winding transformer 334 MVA, 500 kV		OFAF	4	2012
Bureyskaya HPP	Three phase two-winding transformer 400 MVA, 500 kV	OLTC/-	OFAF	3	2008, 2011-2012
Boguchanskaya HPP	Three phase two-winding transformer 400 MVA, 500 kV		OFAF	3	2009
	Three phase two-winding transformer (split LV winding) 400 MVA, 500 kV		OFAF	3	2010
SurgutTPP	Three phase two-winding transformer 500 MVA, 500 kV		OFAF	2	2009
Center transmission grid company/Kaskadnaya s/s	Three phase three-winding autotransformer 500 MVA, 500 kV	OLTC	OFAF	2	2011
Distribution companies: Irkutskenergo, Tatenergo	Three phase two-winding autotransformer 500 MVA, 500/220 kV	OLTC	OFAF	3	1986, 2012
Kashirsky HPP, Siberia transmission grid company	Three phase three-winding autotransformer 500 MVA, 500/220 kV	OLTC	OFAF	4	2007, 2011-2012
Various s/s of Central transmission grid company	Three phase three-winding autotransformer 500 MVA, 500/220/10 kV	OLTC	OFAF	11	2007-2008
	Three phase three-winding autotransformer 500 MVA, 500/220/11 kV	OLTC	OFAF	1	2008
Nyaganskaya CCP	Three phase two-winding transformer 520 MVA, 500 kV		OFAF	1	2012
RusHydro / Sayano-Shushenskaya HPP	Single phase two-winding transformer 533 MVA, 500 kV		OFAF	6	2011
RusHydro / Sayano-Shushenskaya HPP	Single phase two-winding transformer 533 MVA, 500 kV		OFAF	3	2012
Reftinskaya HPP	Three phase two-winding transformer 630 MVA, 500 kV		OFAF	1	2007
Rosenergoatom/Smolensk NPP, Volgodonskaya NPP	Three phase two-winding transformer (split LV winding) 630 MVA, 500 kV		OFAF	5	2010-2011
E.ON / Berezovskaya TPP	Three phase two-winding transformer 1000 MVA, 500 kV	OLTC	OFAF	1	2012



CIS COUNTRIES

Power transformers of voltages 500-750 kV (end)

Zeyskaya HPP, Zagorskaya HPSPP	Three phase two-winding transformer 250 MVA, 525 kV		OFWF	11	1976-1994
Primorskaya TPP, Troitskaya TPP, Surgutskaya TPP, Vyborskaya s/s	Three phase two-winding transformer 250 MVA, 525 kV	OCTC/-	OFAF	20	1976-1991
Generation and Distribution companies: Karmanovskaya TPP, Reftinskaya TPP, Stavropolskaya TPP, Riazanskaya TPP, Kostromskaya TPP, Stavropolskaya HPP, Mosenergo	Three phase two-winding transformer 400 MVA, 525 kV		OFAF	30	1971-1998
Generation and Distribution companies: Cheboksarskaya HPP, Tatenergo, Chuvashenergo	Three phase two-winding transformer 400 MVA, 525 kV		OFWF	10	1971-1994
Krasnoyarskaya HPP	Single phase two-winding transformer 417 MVA, 525 kV		OFWF	14	1968-1973
Sayano-Shushenskaya HPP, Kostromskaya TPP	Single phase two-winding transformer (split LV winding) 533 MVA, 525 kV		OFWF	19	1977-1986
Troitskaya TPP, Reftinskaya TPP, Balakovskaya NPP, Novo-Voronezhskaya NPP, Smolenskaya NPP, Rostovskaya NPP, distribution company Irkutskenergo	Three phase two-winding transformer 630 MVA, 525 kV		OFWF	31	1973-1990
Surgutskaya-2 TPP, Berezovskaya-1 CCPP, Riazanskaya TPP, Permskaya TPP	Three phase two-winding transformer 1000 MVA, 525 kV		ODWF	15	1980-1989
Central transmission grid company	Single phase three-winding transformer 320 MVA, 750 kV	OLTC	OFAF	1	1989
Various s/s of North-West transmission grid company	Single phase three-winding autotransformer 333 MVA, 750 kV	OLTC	ONAF	3	2007
Kalininskaya NPP, Kurskaya NPP, Leningradskaya NPP, Various s/s of Central transmission grid company	Single phase three-winding autotransformer 333 MVA, 750/330 kV	OLTC	OFAF	28	1978-1990
Various s/s of North-West transmission grid company	Single phase three-winding autotransformer 333 MVA, 750/330 kV	OLTC	ONAF	3	2006
Kalininskaya NPP, Kurskaya NPP, Leningradskaya NPP, Smolenskaya NPP	Single phase two-winding transformer (split LV winding) 417 MVA, 750 kV		OFWF	29	1978-2002
Cherepovetskaya s/s	Single phase three-winding autotransformer 417 MVA 750 kV	OCTC	OFAF	2	2003
Central transmission grid company	Single phase three-winding autotransformer 417 MVA, 750/500 kV		OFAF	3	2010
Smolenskaya NPP, Konakovskaya TPP and others, Various s/s of North-West and Central transmission grid companies	Single phase three-winding autotransformer 417 MVA, 750/500 kV	OLTC	OFAF	35	1970-1996, 2011



CIS COUNTRIES

Power transformers of voltages 800-1150 kV			total	3	
Various s/s of Central transmission grid company	Single phase three-winding autotransformer 210 MVA, 1140/500 kV	OFAF	2	1971-1972	
	Single phase three-winding autotransformer 667 MVA, 1150/500 kV	OFAF	1	1981	
Special transformers			total	97	
Cheboksary s/s, Industrial enterprises	Three phase two-winding dry type transformer 1.6 MVA, 6 kV	AN	4	2001	
Municipal enterprise	Three phase two-winding converter transformer 2 MVA, 10 kV	OCTC	ONAN	3	2005
Industrial enterprises	Three phase two-winding mine transformer 2,5 MVA, 10 kV	OCTC	ONAN	2	2008
	Three phase two-winding mine transformer 4 MVA, 10 kV	OCTC	ONAN	2	2006
	Three phase two-winding transformer 6.3 MVA, 10 kV	OCTC	ONAN	30	1989-2008, 2012
Industrial enterprises	Three phase two-winding converter transformer 32 MVA, 10 kV	OLTC	OFAF	2	1997
Central transmission grid company, Moscow distribution company	Three phase two-winding line regulating transformer 16 MVA, 10 kV	OLTC	ONAN	3	2008
Moscow distribution company, Severstal, West-Siberian transmission grid company, East transmission grid company	Three phase two-winding line regulating transformer 40 MVA, 10 kV	OLTC	ONAF	8	2008, 2012
Moscow distribution company, North-West transmission grid company	Three phase two-winding line regulating transformer 63 MVA, 10 kV	OLTC	ONAF	24	2008, 2011-2012
Ferrosplav s/s	Three phase two-winding metallurgical transformer (split LV winding) 63 MVA, 10 kV	OLTC	ONAF	1	2012
Various s/s, Industrial enterprises	Three phase three-winding mine transformer 10 MVA, 35 kV	OLTC	ONAF	4	2006-2008
Central transmission grid company	Three phase two-winding line regulating transformer 63 MVA, 35 kV	OLTC	ONAF	1	2008
Industrial enterprises	Three phase three-winding mine transformer 10 MVA, 110 kV	OLTC	ONAF	2	2006
Russia railway	Three phase two-winding railway transformer 25 MVA, 110 kV	OLTC	ONAF	1	2008
	Three phase two-winding railway transformer 40 MVA, 110 kV	OLTC	ONAF	6	2008
OMK Stal	Three phase two-winding metallurgical transformer (split LV winding) 80 MVA, 110 kV	OLTC	OFAF	2	2006
Sverdlovenego distribution company	Three phase two-winding metallurgical transformer (split LV winding) 80 MVA, 110 kV	OLTC	ONAN	1	2007
Abinsk Electric Steel Works Ltd	Three phase two-winding regulating transformers 160 MVA, 220 kV	OLTC	ONAN	1	2011



CIS COUNTRIES

Electrical reactors		total	218	
East transmission grid company	Three phase shunt reactor 20 MVar, 35 kV, 300,27 A	ONAN	1	2010
Beliy Rast s/s	Single phase reactor 30 MVar, 20 kV, 198 A	ONAF	1	1989
Vyborgskaya s/s	Single phase reactor 2.1 MVar, 100 kV, 2100 A	OFAF	8	1984-1994
Various s/s of Siberia, Yakutskenergo transmission grid company, Industrial enterprises	Three phase controllable reactor 25 MVar, 35 kV	ONAF/ ONAN	7	2009-2010
Various s/s of East and Siberia transmission grid company, Industrial enterprise Sibneft, Distribution companies: Yakutskenergo, Tumenergo, Magadanenergo	Three phase controllable reactor 25 MVar, 110 kV	ONAF/ ONAN	23	1997, 2007, 2009, 2010, 2012
Various s/s of Moscow distribution company	Three phase controllable reactor 63 MVar, 110 kV	ONAF	1	2005
Krasnoyarsk Regional Energy Company / Yergaki s/s	Three phase controllable reactor 25 MVar, 220 kV	ONAF	5	2010
Far Eastern energy company, Siberia transmission grid companies	Three phase controllable reactor 63 MVar, 220 kV	ONAF	4	2012
North-West transmission grid company/Uhta-Mikun s/s	Three phase shunt reactor 75 MVar, 220 kV	ONAF	1	2012
Various s/s of East, West, Western Siberia, Siberia transmission grid companies	Three phase controllable reactor 100 MVar, 220 kV	ONAF	15	2001, 2005-2012
North-West transmission grid company/Vasileostrovskaya s/s	Three phase shunt reactor 60 MVar, 330 kV	ONAN	1	2012
North-West transmission grid company / Severnaya s/s	Three phase shunt reactor 100 MVar, 330 kV	ONAN	1	2012
Various s/s of East, Siberia and West Siberia transmission grid companies	Single phase controllable reactor 60 MVar, 500 kV	ONAF	43	2005-2006, 2009-2012
North-West, Ural, Central, South, West, East and Siberia transmission grid companies, Rosenergoatom/Volgodonskaya NPP, RusHydro/Sayano-Shushenskaya HPP	Single phase shunt reactor 60 MVar, 500 kV	ONAN/ ONAF	83	1990, 2008-2012
Central transmission grid company / Ochakovo s/s	Single phase shunt reactor 110 MVar, 500 kV	ONAN	7	2012
Ural transmission grid company / Tajshet s/s	Three phase controllable reactor 180 MVar, 500 kV	ONAF	1	2012
North-west transmission grid company/Leningradskaya s/s, Novobryanskaya s/s	Single phase shunt reactor 110 MVar, 750 kV	ONAN	4	2011
Baykalo-Amurskaya Highway	Single phase controllable reactor 1,2 MVar, 800 kV	ONAF	12	1985-1997



CIS COUNTRIES

TAJIKISTAN

Power transformers of voltages 110-220 kV			total	41	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Botanicheskaya s/s	Three phase two-winding transformer 6,3 MVA, 110 kV	OLTC	ONAN	2	2005
National power company of Tajikistan Barki Tojik/ Khorog s/s	Three phase two-winding transformer 16 MVA, 110 kV	OLTC	ONAF	2	2009-2010
Akademgorodok s/s, Sportivnaya s/s,	Three phase two-winding transformer (split LV winding) 25 MVA, 110 kV	OLTC	ONAF	4	2008
Vahdat s/s	Three phase two-winding transformer 25 MVA, 110 kV	OLTC	ONAF	1	2008
National power company of Tajikistan Barki Tojik/ Promushlennaya s/s	Three phase three-winding transformer 40 MVA, 110 kV	OLTC	ONAF	2	2006, 2012
Kabadian s/s	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	OFAF	1	1980
Novaya s/s, Rogun s/s, Ordjonikidzeabad s/s, Djangal s/s, Tursun-Zade s/s, Ashtskaya s/s, Hodjent s/s, KNS-2 s/s, Kannibadam s/s, Rumi s/s Uzlovaya s/s	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	OFAF	20	1970-1991
Baipazinskaya HPP	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OLTC	OFAF	1	1974
Tsvetmet Ltd	Three phase two-winding transformer 200 MVA, 220 kV		OFWF	4	1984-1986
Nurekskaya HPP	Three phase three-winding autotransformer 250 MVA 220/110 kV	OLTC	OFAF	1	2004
	Three phase two-winding transformer 400 MVA, 220 kV		OFWF	3	1972

Power transformers of voltages 500-750 kV			total	23	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Nurekskaya HPP	Single phase three-winding autotransformer 167 MVA, 500/220 kV	OLTC	OFAF	6	1976-1977
	Three phase two-winding transformer 400 MVA, 525 kV		OFWF	7	1976-1991
Regar s/s	Single phase three-winding autotransformer 267 MVA, 500/220 kV	OLTC	OFAF	10	1976-1987

TURKMENISTAN

Power transformers of voltages 110-220 kV			total	53	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Gundogar s/s, Dashoguz s/s, Gogtepe Turkmenabad s/s, Industrial enterprise Turkmenneft / Burun oilfield	Three phase two-winding transformer 6,3 MVA, 110 kV	OLTC	ONAN	9	2008-2009, 2012
Industrial enterprises	Three phase two-winding transformer 10 MVA, 110 kV	OLTC	ONAF	2	2008
Turkmenenergo State power company, Ring Spinning Plant in Ruhabat	Three phase three-winding transformer 16 MVA, 110 kV	OLTC	ONAF	2	2005, 2010



CIS COUNTRIES

Power transformers of voltages 110-220 kV (end)

Turkmenenergo State power company	Three phase three-winding transformer 16 MVA, 110 kV	OLTC	ONAF	4	2005
	Three phase two-winding transformer 25 MVA, 110 kV	OLTC	ONAF	6	2006, 2012
	Three phase three-winding transformer 40 MVA, 110/35 kV	OLTC	ONAF	2	2005
Ashgabadenergo distribution company/Severnaya s/s, Dagly s/s, Nar s/s	Three phase three-winding transformer 40 MVA, 110 kV	OLTC	ONAF	5	2009, 2012
Krasnovodskaya TPP-2	Three phase two-winding transformer 90 MVA, 110 kV		OFAF	1	1965
Yuzhnaya s/s	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	OFAF	1	1979
Mariyskaya TPP, Krasnovodskaya-2 TPP, Kurtli s/s, Vostochnaya s/s, Voskhod s/s, Chardjou s/s, Kompessornaya s/s, Shatlyk s/s, Turkmenian Railway, Turkmenenergo State power company	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	OFAF	19	1973-2006
Mariyskaya TPP	Three phase two-winding transformer 250 MVA, 110 kV		OFAF	1	1972
	Three phase two-winding transformer 250 MVA, 220 kV		OFAF	1	1980

Power transformers of voltages 220-330 kV

total 1

Turkmenenergo State power company	Three phase three-winding autotransformer 63 MVA, 230 kV	OLTC	OFAF	1	2006
-----------------------------------	---	------	------	---	------

Power transformers of voltages 500-750 kV

total 8

Various s/s	Single phase three-winding autotransformer 167 MVA, 500/220 kV	OLTC	OFAF	3	1998-2001
Mariyskaya TPP	Single phase three-winding autotransformer 267 MVA, 500/220 kV	OLTC	OFAF	4	1981-1984
	Three phase two-winding transformer 250 MVA, 525 kV		OFAF	1	1985

Special transformers

total 1

Turkmenenergo State power company	Three phase two-winding line regulating transformer 16 MVA, 10 kV	OLTC	ONAN	1	2005
-----------------------------------	--	------	------	---	------

UKRAINE

Power transformers of voltages 110-220 kV

total 447

Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Distribution company Luganskoe Energeticheskoe Ob'edinenie, Sumyoblenergo distribution company	Three phase two-winding transformer 2,5 MVA, 110 kV	OLTC	ONAN	5	2010, 2012
Distribution companies: Luganskoe Energeticheskoe Ob'edinenie, Chernigovoblenergo, Poltavaoblenergo	Three phase two-winding transformer 6,3 MVA, 110 kV	OLTC	ONAN	6	2011-2012



CIS COUNTRIES

Power transformers of voltages 110-220 kV

Distribution companies: Luganskoe Energeticheskoe Ob'edinenie, Sumyoblenergo	Three phase three-winding transformer 6,3 MVA, 110 kV	OLTC	ONAN	2	2012
Distribution compaies: Luganskoe Energeticheskoe Ob'edinenie, Cherkassyoble- nergo, DTEK , Industrial enterprises, Lvov football stadiums, Lvov Airport s/s	Three phase two-winding transformer 10 MVA, 110 kV	OLTC	ONAF	18	2005-2008, 2010-2012
Distribution companies: Sumyoblenergo, Kievenergo, Chernigovoblenergo, Poltavaoblenergo	Three phase three-winding transformer 10 MVA, 110 kV	OLTC	ONAF	20	2006, 2010-2012
Industrial enterprises, Luganskoe Energeticheskoe Ob'edinenie, distribution companies: Cherkassyoble- nergo, Kharkovoblenergo, Sumyoblenergo, Kievenergo, Naftogaz of Ukraine, Food industry enterprises	Three phase two-winding transformer 16 MVA, 110 kV	OLTC	ONAF	30	2005-2008, 2010-2012
Distribution companies: Cherkassyoblenergo, Cherni- govoblenergo, Industrial enterprises, Sumyoblenergo, Vinnitsaoblenergo	Three phase three-winding transformer 16 MVA, 110 kV	OLTC	ONAF	11	2006-2008, 2012
Vinnitsa confectionery plant, Solnechnaya Kiliya s/s	Three phase two-winding transformer 25 MVA, 110 kV	OLTC	ONAF	5	2010-2012
Distribution companies: Luganskoe Energeticheskoe Ob'edinenie, Sevastopole- nergo, Krymenergo, Odessa- oblenergo, Vinnitsaoblenergo, Poltavaoblenergo, National transmission company Ukra- energo, Industrial enterprises	Three phase two-winding transformer (split LV winding) 25 MVA, 110 kV	OLTC	ONAF	17	2005-2012
Distribution companies: Kievoblenergo, Kharkovoble- nergo, Odessaoblenergo, Lvovoblenergo, Donetskoble- nergo, Khersonoblenergo, Prikarpatyeoblenergo, Lugan- skoe Energeticheskoe Ob'edi- nenie, Mironovskiy Hlebo- product Sa, Sevastopol CHP	Three phase three-winding transformer 25 MVA, 110 kV	OLTC	ONAF	19	2005-2008, 2010-2012
Metallurgical industrial complex Azovstal	Three phase two-winding transformer 40 MVA, 110 kV	OLTC	ONAF	1	2010
Distribution companies: Kievenergo, Odessaoble- nergo, Poltavaoblenergo, Kharkovoblenergo, National transmission company Ukrener- go, Metallurgical industrial complex Azovstal, Alchevsk Coke-Chemical Plant, Industrial enterprises	Three phase two-winding transformer (split LV winding) 40 MVA, 110 kV	OLTC	ONAF	28	2005-2012



CIS COUNTRIES

Power transformers of voltages 110-220 kV

Various s/s of National transmission company Ukrenergo, Distribution companies: Luganskoe Energeticheskoe Ob'edinenie, Donetoblenergo, Luganskoe Energeticheskoe Ob'edinenie, Kievoblenergo, Chernigovoblenergo, Industrial enterprises, Service-invest	Three phase three-winding transformer 40 MVA, 110 kV	OLTC	ONAF	31	2006-2012
Drill Collars and Kellys Plant	Three phase three-winding transformer 42 MVA, 110 kV	OLTC	ONAF	1	2012
Industrial enterprises: Concern Stirol, Alchevsk Iron & Steel Works, Distribution companies Luganskoe Energeticheskoe Ob'edinenie, Odessaoblenergo, Kievevnergo, Krymenergo, Cherkassyoblenergo	Three phase two-winding transformer (split LV winding) 63 MVA, 110 kV	OLTC	ONAF	18	2003-2012
Metallurgical industrial complex Azovstal	Three phase two-winding transformer (split LV winding) 63 MVA, 110 kV	OLTC	OFAF	1	2007
National transmission company Ukrenergo/ Central transmission systems, Distribution company Luganskoe Energeticheskoe Ob'edinenie	Three phase three-winding transformer 63 MVA, 110 kV	OLTC	ONAF	3	2005, 2010, 2012
Industrial enterprises	Three phase three-winding transformer 80 MVA, 110 kV	OLTC	ONAF	2	2000-2001
Krymenergo distribution company	Three phase two-winding transformer (split LV winding) 80 MVA, 110 kV	OLTC	ONAF	1	2010
Azot industrial enterprise	Three phase two-winding transformer (split LV winding) 80 MVA, 110 kV	OLTC	OFAF	2	2011
Ukrhidroenergo/Kievskaya HPP, Kanev HPP	Three phase two-winding transformer (split LV winding) 90 MVA, 110 kV		ONAF	6	2001-2009, 2012
Industrial enterprises	Three phase two-winding transformer (split LV winding) 125 MVA, 110 kV	OLTC	OFAF	2	1977-1990
Kharkovskaya TPP-5	Three phase two-winding transformer 125 MVA, 110 kV		OFAF	1	2012
Kharkovskaya TPP-5, Ukrhidroenergo	Three phase two-winding transformer 125 MVA, 110 kV		OFAF	2	2006-2007
Alchevsk Metallurgical industrial complex	Three phase two-winding transformer 200 MVA, 110 kV		OFAF	2	2008
National transmission company Ukrenergo	Three phase three-winding autotransformer 200 MVA, 110 kV	OLTC	ONAF	1	2009
Starobeshevskaya TPP, Zmievskaaya TPP	Three phase two-winding transformer 250 MVA, 110 kV	OCTC	OFAF	5	1972-1983
Series of Dniestr HPPs	Three phase two-winding transformer 250 MVA, 110 kV	OCTC	OFAF	1	1981
Uglegorskaya TPP, Ladyzhynskaya TPP	Three phase two-winding transformer 400 MVA, 110 kV		OFAF	3	1970-1972
Industrial enterprises	Three phase two-winding transformer 16 MVA, 150 kV	OLTC	ONAF	3	2003, 2006



CIS COUNTRIES

Power transformers of voltages 110-220 kV

Geolog s/s, Distribution companies Kirovogradoblenergo, Zaporozhyeoblenergo, Khersonoblenergo, Poltavaoblenergo	Three phase three-winding transformer 25 MVA, 150 kV	OLTC	ONAF	6	2005-2008, 2012
Industrial enterprises	Three phase two-winding transformer (split LV winding) 32 MVA, 150 kV	OLTC	ONAF	4	1981, 2007, 2011
Industrial enterprises, Distribution company Dneproblenergo	Three phase two-winding transformer (split LV winding) 40 MVA, 150 kV	OLTC	ONAF	6	2008-2009, 2011
Industrial enterprises	Three phase two-winding transformer (split LV winding) 40 MVA, 150 kV	OLTC	OFAF	2	2008
Distribution company Dneproblenergo, DTEK / Botiyevskaya WPP, Central energy company	Three phase three-winding transformer 40 MVA, 150 kV	OLTC	ONAF	6	2005, 2011-2012
Zaporozhskaya TPP, Industrial enterprises, Yuzhnoukrainskaya NPP, Graphite electrode plant Ukrainsky Grafrit	Three phase two-winding transformer (split LV winding) 63 MVA, 150 kV	OLTC	ONAF	25	1972-2007, 2012
Dneprovskiy Metallurgical industrial complex	Three phase two-winding transformer (split LV winding) 63 MVA, 150 kV	OLTC	OFAF	2	2008
Yuzhnoukrainskaya NPP, National transmission compa- ny Ukrenergo, Distribution companies: Poltavaoblenergo, Dneoroblenergo, Khersono- blenergo, Zakarpatyeoble- nergo, Yeristovskiy ore mining and processing enterprise	Three phase three-winding transformer 63 MVA, 150 kV	OLTC	ONAF	16	1984-2010, 2012
Dneprogidroenergo genera- tion company, Ukgidro- energo/Kahovskaya HPP	Three phase two-winding transformer 70 MVA, 150 kV		OFWF	2	2004, 2012
Ukgidroenergo	Three phase two-winding transformer 95 MVA, 150 kV		OFAF	9	2007-2009, 2012
Dneprovskaya HPP	Three phase two-winding transformer 125 MVA, 150 kV		OFWF	1	1991
Dneprodzerzhinsk HPP, Ukgidroenergo	Three phase two-winding transformer 130 MVA, 150 kV		OFAF	4	2002-2009, 2012
Kremenchug HPP, Dniepr HPP	Three phase two-winding transformer 250 MVA, 150 kV		OFWF	8	1974-1979
Pridneprovskaya TPP	Three phase two-winding transformer 250 MVA, 150 kV		OFAF	4	1975-1985
Ukgidroenergo	Three phase two-winding transformer 280 MVA, 150 kV		OFWF	3	2007-2009, 2012
Zaporozhskaya TPP	Three phase two-winding transformer 400 MVA, 150 kV		OFAF	2	1972
Yuzhnoukrainskaya NPP	Three phase three-winding transformer 25 MVA, 220 kV	OLTC	ONAF	2	1978
Various s/s of South transmission grid company	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	OFAF	2	1978-1981
Industrial enterprises	Three phase two-winding transformer (split LV winding) 100 MVA, 220 kV	OLTC	OFAF	1	1994



CIS COUNTRIES

Power transformers of voltages 110-220 kV (end)

Burshtynskaya TPP, Various s/s of Donbass, Western and Crimean transmission systems, Industrial enterprises	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	OFAF	34	1970-1994
National transmission company Ukrenergo	Three phase two-winding transformer 125 MVA, 220 kV	OCTC	OFAF	1	2006
Industrial enterprises	Three phase three-winding transformer 125 MVA, 220 kV	OLTC	ONAF	1	2009
	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	ONAF	2	2006, 2009
National transmission company Ukrenergo	Three phase two-winding transformer (split LV winding) 160 MVA, 220 kV	OLTC	OFAF	2	1978-2000
	Three phase two-winding transformer 160 MVA, 220 kV	OLTC	ONAF	1	2009
	Three phase two-winding transformer (split LV winding) 160 MVA, 220 kV	OLTC	ONAF	1	2009
Various s/s of Donbass and Western transmission systems, Industrial enterprises	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OLTC	OFAF	24	1970-2001, 2011
Dobrotvorskaya TPP	Three phase two-winding transformer 200 MVA, 220 kV		OFAF	2	1989-1988
Various s/s of Donbass transmission system	Three phase three-winding autotransformer 240 MVA, 220/110 kV	OCTC	OFAF	1	1970
Starobeshevskaya TPP, Luganskaya TPP	Three phase two-winding autotransformer 250 MVA, 220/110	OLTC	OFAF	1	1991-1998
DTEK / Burshtynskaya TPP, Luganskaya TPP, Luganskaya TPP	Three phase two-winding transformer 250 MVA, 220 kV	OCTC/-	OFAF	9	2009, 2012
Starobeshevskaya TPP, Various s/s of Donbass transmission system	Three phase three-winding autotransformer 250 MVA, 220/110 kV	OLTC	OFAF	16	1982-1990

Power transformers of voltages 220-330 kV

total 388

Zaporozhskaya NPP, Rovenskaya NPP, Khmelnytskaya NPP, Chernobylskaya NPP, Yuzhnoукраїнська NPP	Three phase two-winding transformer (split LV winding) 63 MVA, 330 kV	OLTC	OFAF	16	1982-1990
Zaporozhskaya NPP, Dneprostal	Three phase two-winding transformer (split LV winding) 63 MVA, 330 kV	OLTC	ONAF	3	1992-2008
Rovenskaya NPP, Khmelnytskaya NPP	Three phase two-winding auxiliary transformer (split LV winding) 63 MVA, 330 kV	OLTC	ONAF	4	2003-2008
Various s/s of National transmission company Ukrenergo	Three phase three-winding autotransformer 125 MVA, 330 kV	OLTC	OFAF	2	2009
Kurakhovskaya TPP, Tripolskaya TPP, Rovenskaya NPP, Chernobylskaya NPP, Various s/s of West, North, Central, South-West and South transmission grid companies	Three phase three-winding autotransformer 125 MVA, 330/110 kV	OLTC	OFAF	50	1972-1990
National transmission company Ukrenergo	Three phase three-winding autotransformer 125 MVA, 330/110 kV	OLTC	ONAF	1	2006
Dneprostal	Three phase two-winding transformer 160 MVA, 330 kV	OLTC	ONAF	2	2009



CIS COUNTRIES

Power transformers of voltages 220-330 kV

Slavianskaya TPP, Ladyzhynskaya TPP, Ulegorskaya TPP, Zmievskaaya TPP, Kakhovka HPP, Series of Dniestr HPPs, Various s/s of Crimean, Western, North, Central, South-West and South transmission systems, National transmission company Ukrenergo	Three phase three-winding autotransformer 200 MVA, 330/110 kV	OLTC	OFAF	111	1970-2009
Various s/s of National transmission company Ukrenergo	Three phase three-winding autotransformer 200 MVA, 330 kV	OLTC	ONAF	5	2009, 2011
National transmission company Ukrenergo	Three phase three-winding autotransformer 200 MVA, 330/110 kV	OLTC	ONAF	1	2012
Mirgorodskaya s/s	Three phase three-winding autotransformer 200 MVA, 330 kV	OLTC	OFAF	1	2003
Burshtynskaya TPP, Various s/s of Donbass, Crimean and Western T&D systems	Three phase three-winding autotransformer 240 MVA, 330/220 kV	OCTC	OFAF	14	1971-1986
Various s/s, Kremenchug TPP	Three phase three-winding autotransformer 240 MVA, 330/150 kV	OCTC	OFAF	8	1970-1972
Slavianskaya TPP, Krymskaya NPP, Various s/s of Donbass and Crimean transmission systems	Three phase three-winding autotransformer 250 MVA, 330/220 kV	OLTC	OFAF	7	1987-1999
Krivorozhskaya TPP, Yuzhno-ukrainskaya NPP, Zaporozhskaya TPP, Kremenchug TPP, Various s/s of North, South and Dneprovskaya transmission systems	Three phase three-winding autotransformer 250 MVA, 330/150 kV	OCTC	OFAF	84	1972-1995
Pridneprovskaya TPP, Kurakhovskaya TPP, Burshtynskaya TPP, Zmievskaaya TPP, Rovenskaya NPP, Tashlyk HPSP, Rovenskaya NPP	Three phase two-winding transformer 250 MVA, 330 kV		OFAF	17	1973-2005
Ukrgidroenergo, Kremenchug HPP, Series of Dniestr HPPs	Three phase two-winding transformer 250 MVA, 330 kV		OFAF	5	1981-1983, 2012
DTEK / /Kurahov TPP	Three phase two-winding transformer 265 MVA, 330 kV		OFAF	4	2009-2010, 2012
Pridneprovskaya TPP, Dneprovskaya HPP	Three phase two-winding autotransformer 400 MVA, 330/150 kV	OLTC	OFAF	3	1981-1987
Pridneprovskaya TPP, Zaporozhskakaya TPP, Slavianskaya TPP, Ladyzhynskaya TPP, Ulegorskaya TPP, Zmievskaaya TPP, Tripolskaya TPP	Three phase two-winding transformer 400 MVA, 330 kV		OFAF	30	1970-1998
Dniestrovskaya HPSP	Three phase two-winding transformer 430 MVA, 330 kV		OFAF	1	2008
Chernobylskaya NPP	Three phase two-winding transformer 630 MVA, 330 kV		OFAF	6	1972-1991
Zaporozhskaya TPP, Slavianskaya TPP, Ulegorskaya TPP	Three phase two-winding transformer 1000 MVA, 330 kV		OFAF	7	1971-1977
Ulegorskaya TPP	Three phase two-winding transformer 1000 MVA, 330 kV		ODWF	2	1988
Rovenskaya NPP, Khmel'nitskaya NPP, Yuzhnoukrainskaya NPP	Three phase two-winding transformer 1250 MVA, 330 kV		ODWF	4	1981-1986



CIS COUNTRIES

Power transformers of voltages 330-400 kV			total	8	
Burshtynskaya TPP	Single phase three-winding autotransformer 133 MVA, 400/220 kV	OCTC	OFAF	2	1970
	Single phase three-winding autotransformer 210 MVA, 400/330 kV	OLTC	OFAF	3	1978
National transmission company Ukrenergo/Zalyutino s/s, Severnaya s/s, Zarya s/s	Three phase three-winding autotransformer 200 MVA, 330/111	OLTC	ONAF	3	2011

Power transformers of voltages 500-750 kV			total	143	
Various s/s of Donbass transmission system	Three phase three-winding autotransformer 250 MVA, 500/110 kV	OLTC	OFAF	2	1984-1993
	Single phase three-winding autotransformer 167 MVA, 500/220 kV	OLTC	OFAF	9	1983-1991
	Single phase three-winding autotransformer 417 MVA, 750/500 kV	OLTC	OFAF	7	1973-1989
Zaporozhskaya NPP, Rovenskaya NPP, Khmel'nitskaya NPP, Chernobyl'skaya NPP, Yuzhnoukrainskaya NPP, Various s/s of Dneprovskaya, Western, North, Central, South-West and Donbass transmission systems	Single phase three-winding autotransformer 333 MVA, 750/330 kV	OLTC	OFAF	80	1973-1993, 2012
National transmission company Ukrenergo	Single phase three-winding autotransformer 333 MVA, 750 kV	OLTC	OFAF	4	2006
Zaporozhskaya NPP, Rovenskaya NPP, Khmel'nitskaya NPP, Chernobyl'skaya NPP, Yuzhnoukrainskaya NPP	Single phase two-winding transformer (split LV winding) 417 MVA, 750 kV		OFWF	41	1983-1996

Special transformers			total	48	
Zmievs'kaya TPP	Three phase two-winding dry protected transformer 1 MVA, 6 kV	OCTC	AN	2	2001
Municipal enterprise, Various s/s	Three phase two-winding converter transformer 2 MVA, 10 kV	OCTC	ONAN	4	2005
	Three phase two-winding mine transformer 2,5 MVA, 10 kV	OCTC	ONAN	1	2008
Ilovayskaya mine	Single phase two-winding furnace transformer 12.5 MVA, 10 kV	OLTC	OFWF	1	2000
Ukrainsky Grafit	Single phase two-winding furnace transformer 16 MVA, 10 kV	OLTC	OFAF	4	1997
South railway	Single phase two-winding transformer 0,8 MVA, 15 kV		ONAN	1	2005
	Single phase two-winding transformer 0,8 MVA, 27,5 kV		ONAN	1	2005
Vertikal'naya s/s	Three phase three-winding mine transformer 16 MVA, 35 kV	OLTC	ONAF	2	2011
Industrial enterprises	Single phase two-winding furnace transformer 30 MVA, 35 kV	OLTC	OFWF	4	2003
	Single phase two-winding furnace transformer 40 MVA, 150 kV	OLTC	OFAF	4	1995-1996, 2012
Zasyadko coal mine	Three phase three-winding mine transformer 25 MVA, 110 kV	OLTC	ONAF	2	2010
Ukrainian network of railway lines	Three phase three-winding railway transformer 25 MVA, 110 kV	OLTC	ONAF	1	2012
Ukrainian network of railway lines	Three phase three-winding railway transformer 40 MVA, 110 kV	OLTC	ONAF	8	2011-2012
Industrial enterprises: Donetskstal, Krasnoarmeysk-Western mine	Three phase three-winding mine transformer 40 MVA, 110 kV	OLTC	ONAF	4	2006-2008



CIS COUNTRIES

Special transformers (end)

Novokramatorsk machine building plant	Three phase two-winding transformer 63 MVA, 110 kV	OLTC	ONAN	1	2007
Metallurgical industrial complex Azovstal	Three phase three-winding metallurgical transformer 80 MVA, 110 kV	OLTC	OFAF	2	2006
National transmission company Ukrenergo	Single phase three-winding furnace transformer 92 MVA, 110 kV	OLTC	ONAF	4	2006
Donetskstal industrial enterprise	Three phase two-winding metallurgical transformer 160 MVA, 110 kV	OLTC	ONAF	2	2011

Electrical reactors

total 43

Zapadnoukrainskaya s/s, Rovenskaya NPP, National transmission company Ukrenergo	Single phase shunt reactor 0.27 MVA, 35 kV, 30 A Three phase shunt reactor 20 MVA, 35 kV, 300,5 A	ONAN	5	2004-2008
Various s/s of National transmission company Ukrenergo	Single phase shunt reactor 110 MVA, 750 kV, 242 A Single phase shunt reactor 110 MVA, 750 kV, 242 A	ONAN	6	2006, 2010-2012
		ONAN	10	2009, 2011
Zapadnoukrainskaya s/s, National transmission company Ukrenergo Dneprovskaya s/s, National transmission company Ukrenergo	Single phase shunt reactor 110 MVA, 750 kV, 242 A	ONAN	20	2004-2008
		OFAF	2	2004-2008

UZBEKISTAN

Power transformers of voltages 110-220 kV

total 109

Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Durmen s/s, CPU s/s, Kenguzar s/s, Dzhizak Textile mill	Three phase two-winding transformer 10 MVA, 110 kV	OLTC	ONAF	8	2008-2009, 2012
Uzavtoprom / Uzbekistan General Motors	Three phase two-winding transformer 16 MVA, 110 kV	OLTC	ONAF	4	2010
Various s/s	Three phase two-winding transformer (split LV winding) 25 MVA, 110 kV	OLTC	ONAF	4	2009, 2012
Navoi TPP, Tashkentskaya TPP	Three phase two-winding transformer 200 MVA, 110 kV		OFAF	4	1985-1990
Uzbekenergo distribution company / Navoi TPP	Three phase two-winding (split LV winding) transformer 32 MVA, 220 kV	OLTC	ONAF	1	2012
Talimandjarskaya TPP	Three phase two-winding transformer (split LV winding) 40 MVA, 220 kV	OLTC	ONAF	2	1997
Karshynskiy main canal	Three phase two-winding transformer (split LV winding) 63 MVA, 220 kV	OLTC	OFAF	1	2008
Industrial enterprises	Three phase three-winding transformer 63 MVA, 220 kV	OLTC	OFAF	2	2007
Various s/s	Three phase three-winding autotransformer 63 MVA, 220/110 kV	OLTC	OFAF	13	1978-2000
Navoi TPP	Three phase two-winding transformer 90 MVA, 220 kV		OFAF	1	1971
Tahia-Tashskaya TPP	Three phase two-winding transformer 125 MVA, 220 kV	OCTC	OFAF	1	1974
Tahia-Tashskaya TPP, Various s/s	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	OFAF	38	1987-1996
Various s/s	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OLTC	OFAF	24	1972-1991



CIS COUNTRIES

Power transformers of voltages 110-220 kV (end)

Tashkentskaya TPP, Navoi TPP	Three phase two-winding transformer 200 MVA, 220 kV	OCTC	OFAF	3	1970-1991
Navoi CCPP	Three phase two-winding transformer 226 MVA, 220 kV		OFAF	1	2010
Navoi CCPP	Three phase two-winding transformer 415 MVA, 220 kV	OCTC	OFAF	1	2011
Talimandjarskaya TPP	Three phase two-winding transformer 1000 MVA, 220 kV		ODWF	1	1996

Power transformers of voltages 500-750 kV

total 68

Tashkentskaya TPP, Syrdaryinskaya TPP, Various s/s	Single phase three-winding autotransformer 167 MVA, 500/220 kV	OLTC	OFAF	49	1978-2008
Novo-Angrenskaya TPP	Single phase three-winding autotransformer 267 MVA, 500/220 kV	OLTC	OFAF	4	1987-1988
Syrdaryinskaya TPP, Novo-Angrenskaya TPP	Three phase two-winding transformer 400 MVA, 525 kV		OFAF	9	1976-1992
Surhan 500 s/s, Uzbekistanskaya s/s	Single phase three-winding autotransformer 167 MVA, 500 kV	OLTC	OFAF	6	2009

Special transformers

total 5

Uzbekenergo distribution company / Ishtuhan s/s	Three phase two-winding line regulating transformer 16 MVA, 10 kV	OLTC	ONAN	1	2012
Kokdumala Shurtanskiy chemical company	Three phase two-winding transformer 16 MVA, 6 kV	OLTC	ONAN	2	1997
	Three phase two-winding transformer 40 MVA, 10 kV	OLTC	ONAF	2	2000

Electrical reactors

total 9

Novo-Angrenskaya TPP, Sogdiana s/s, Uzbekistanskaya s/s	Single phase shunt reactor 60 MVA, 500 kV		ONAN	9	2008
---	--	--	------	---	------



EUROPE



ALBANIA*
BOSNIA
& HERZEGOVINA
BULGARIA
CROATIA
CZECH REPUBLIC
ESTONIA
FINLAND
GERMANY
GREECE
HUNGARY

ICELAND
LATVIA
LITHUANIA
MACEDONIA
POLAND
ROMANIA
SERBIA &
MONTENEGRO
SLOVAKIA
SPAIN
SWITZERLAND
TURKEY

ZTR's transformers and reactors work virtually faultfree in 21 European countries, including the Baltics, having proven over decades their reliability and efficiency.

ZTR was a principal supplier of 220-750 kV transmission lines linking power systems of former USSR republics (including Baltic countries) with power grids of Eastern Germany, Poland, Czech Republic and Slovakia, Romania, Serbia & Montenegro and Bulgaria, reaching Western Europe, Greece and Turkey networks.

Among the most impressive projects are Kozloduy NPP in Bulgaria (6 three phase transformers 630 MVA, 400 kV, 5 three phase transformers 250 MVA, 400 kV), Berke Dam HPP, Turkey (10 single phase transformers 62.5 MVA, 163 kV) and Solar Power Plants, Spain.

In 2010 Spain has become the 84th country in ZTR sales reference list. In 2010-2011 ZTR supplied eight transformers for solar power plants of Abengoa group.



EUROPE





ALBANIA*

Power transformers of voltages up to 66 kV				total	17
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 0.56 MVA, 10 kV	OCTC	ONAN	6	1960
	Three phase two-winding transformer 0.75 MVA, 10 kV	OCTC	ONAN	7	1960-1961
	Three phase two-winding transformer 1 MVA, 10 kV	OCTC	ONAN	2	1960
	Three phase two-winding transformer 1.8 MVA, 35 kV	OCTC	ONAN	2	1960
Power transformers of voltages 110-220 kV				total	6
Various s/s	Three phase two-winding transformer 5.6 MVA, 110 kV	OCTC	ONAN	4	1961
	Three phase three-winding transformer 7.5 MVA, 110 kV	OCTC	ONAN	2	1960

BOSNIA & HERZEGOVINA

Power transformers of voltages up to 66 kV				total	3
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Uglevik TPP, Gatsko TPP	Three phase two-winding transformer (split LV winding) 40 MVA, 35 kV	OLTC	ONAF	3	1978-1986
Power transformers of voltages 330-400 kV				total	6
Gatsko TPP	Single phase two-winding transformer 150 MVA, 400 kV		OFAF	4	1978
Uglevik-2 TPP	Three phase two-winding transformer 400 MVA, 420 kV		OFAF	2	1980-1985

BULGARIA

Power transformers of voltages up to 66 kV				total	9
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Varna TPP	Three phase two-winding transformer (split LV winding) 25 MVA, 35 kV	OLTC	ONAF	3	1977-1978
Kozlodui NPP	Three phase two-winding transformer (split LV winding) 63 MVA, 35 kV	OLTC	ONAF	6	1985-1993
Power transformers of voltages 110-220 kV				total	57
Various s/s	Three phase three-winding transformer 40 MVA, 110 kV	OLTC	ONAF	3	1975
Maritza-Iztok-2 TPP	Three phase two-winding transformer 200 MVA, 110 kV		OFAF	1	1983
Bobov Dol TPP, Varna TPP	Three phase two-winding transformer 250 MVA, 110 kV		OFAF	4	1972-1989
Kozlodui NPP, Varna TPP, Maritza-Iztok-2 TPP, Bobov Dol TPP, Okraina South s/s	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OLTC in MV line	OFAF	39	1973-1997
Kozlodui NPP, Varna TPP, Bobov Dol TPP	Three phase two-winding transformer 250 MVA, 220 kV	OCTC	OFAF	10	1973-1989



EUROPE

Power transformers of voltages 330-400 kV				total	37
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Chaira HPP	Single phase two-winding transformer (split LV winding) 158 MVA, 400 kV	OLTC	OFWF	7	1986-1987
Kozlodui NPP, Maritza-Iztok-2 TPP	Three phase two-winding transformer 250 MVA, 420 kV		OFAF	8	1978-1989
Various s/s	Three phase three-winding autotransformer 250 MVA, 400/121 kV	OLTC	OFAF	6	1979-1990
Maritza-Iztok-3 TPP, Mizia s/s	Single phase three-winding autotransformer 267 MVA, 400/231 kV	OLTC	OFAF	8	2002-2008
Kozlodui NPP, Maritza-Iztok-2 TPP and others	Three phase two-winding transformer 630 MVA, 420 kV		OFWF	8	1982-1990
Power transformers of voltages 500-750 kV				total	7
Dobrudja s/s	Single phase three-winding autotransformer 417 MVA, 750/400 kV	OLTC in the common neutral	OFAF	7	1986-1987

CROATIA

Power transformers of voltages up to 66 kV				total	1
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Sisak TPP	Three phase two-winding transformer (split LV winding) 25 MVA, 35 kV	OLTC	ONAF	1	1975
Power transformers of voltages 110-220 kV				total	2
Sisak TPP	Three phase two-winding transformer 250 MVA, 220 kV		OFAF	1	1975
	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OLTC	OFAF	1	1975

CZECH REPUBLIC

Power transformers of voltages 110-220 kV				total	1
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Detmorovitse TPP	Three phase two-winding transformer 250 MVA, 110 kV		OFAF	1	1984
Power transformers of voltages 220-330 kV				total	4
Various s/s	Three phase three-winding autotransformer 200 MVA, 230/121 kV	OLTC	OFAF	4	1981-1989
Power transformers of voltages 330-400 kV				total	67
Pocherady TPP and others	Single phase two-winding transformer 150 MVA, 400 kV		OFAF	11	1968-1976
Various s/s	Single phase three-winding autotransformer 167 MVA, 400/220 kV	OLTC	OFAF	8	1991-1992
Dukovany NPP and others	Three phase two-winding transformer 250 MVA, 420 kV		OFAF	19	1977-1988
Temelin NPP and others	Three phase three-winding autotransformer 250 MVA, 400/110 kV	OLTC in the common neutral	OFAF	22	1980-1992
Temelin NPP	Single phase two-winding transformer 400 MVA, 400 kV		OFAF	7	1990-1993



EUROPE

ESTONIA

Power transformers of voltages up to 66 kV				total	8
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Silmet	Three phase two-winding transformer 0.4 MVA, 30 kV	OCTC	ONAN	2	2001
Estonskaya TPP	Three phase three-winding transformer 32 MVA, 35 kV	OLTC	ONAF	6	1970-1973
Power transformers of voltages 110-220 kV				total	12
Gaur	Three phase three-winding transformer 6.3 MVA, 110 kV	OLTC	ONAN	1	1997
Pribaltiyskaya TPP	Three phase two-winding transformer 125 MVA, 220 kV		OFAF	4	1970-1987
Various s/s of Estonian T&D systems	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC	OFAF	5	1973-1985
Pribaltiyskaya TPP	Three phase three-winding autotransformer 200 MVA, 220/110 kV Three phase three-winding autotransformer 240 MVA, 220/110 kV	OLTC	OFAF	1	1983
		OCTC	OFAF	1	1970
Power transformers of voltages 220-330 kV				total	20
Various s/s of Estonian T&D systems	Three phase three-winding autotransformer 125 MVA, 330/110 kV	OLTC	OFAF	6	1972-1992
Various s/s of Estonian T&D systems	Three phase three-winding autotransformer 200 MVA, 330/110 kV	OLTC	OFAF	1	1978
Pribaltiyskaya TPP, Various s/s of Estonian T&D systems	Three phase three-winding autotransformer 240 MVA, 330/220 kV	OCTC	OFAF	3	1975-1977
Estonskaya TPP	Three phase two-winding transformer 250 MVA, 330 kV		OFAF	10	1970-1990
Power transformers of voltages 330-400 kV				total	1
Sever T&D system	Three phase two-winding transformer 125 MVA, 347 kV		OFAF	1	1997

FINLAND

Power transformers of voltages up to 66 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 2.5 MVA, 10 kV	OCTC	ONAN	2	1988

GERMANY

Power transformers of voltages 110-220 kV				total	19
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Vetshau TPP, Tirbah TPP	Three phase two-winding transformer 125 MVA, 220 kV		OFAF	2	1970
Vetshau TPP	Three phase two-winding transformer 125 MVA, 220 kV	OCTC	OFAF	3	1980-1983
Vetshau TPP and others	Three phase three-winding transformer 160 MVA, 220 kV	OLTC in HV neutral	OFAF	14	1986-1989



GREECE

Power transformers of voltages up to 66 kV			total	34	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 5 MVA, 10 kV	OCTC	ONAN	10	1990-1991
	Three phase two-winding transformer 6.3 MVA, 10 kV	OCTC	ONAN	4	1990-1991
	Three phase two-winding transformer 2 MVA, 20 kV	OCTC	ONAN	2	1990-1991
	Three phase two-winding transformer 4 MVA, 20 kV	OCTC	ONAN	5	1996
	Three phase two-winding transformer 7 MVA, 20 kV	OCTC	ONAN	4	1996
	Three phase two-winding transformer 2 MVA, 35 kV	OCTC	ONAN	2	1990
	Three phase two-winding transformer 20 MVA, 66 kV	OLTC	ONAF	3	1993
	Three phase two-winding transformer 25 MVA, 66 kV	OLTC	ONAF	3	1993
	Three phase two-winding transformer 40 MVA, 66 kV	OLTC	ONAF	1	1993
	Power transformers of voltages 110-220 kV			total	26
Various s/s	Three phase two-winding transformer 38 MVA, 132 kV	OLTC	ONAF	1	1995
	Three phase two-winding transformer 25/31.25 MVA, 150 kV	OLTC	ONAF	1	1996
	Three phase two-winding transformer 50 MVA, 150 kV	OLTC	ONAF	14	1993-1998
Pournari-2 HPP	Three phase two-winding transformer 38 MVA, 161 kV	OCTC	OFAF	2	1992-1993
	Three phase two-winding transformer 90 MVA, 161 kV	OCTC	OFAF	1	1993
Platanovyssi HPP	Three phase two-winding transformer 68 MVA, 161 kV	OLTC	OFAF	2	1998
Various s/s	Three phase two-winding transformer (split LV winding) 40 MVA, 161 kV	OLTC	ONAF	2	1991
	Three phase two-winding transformer 40/50 MVA, 161 kV	OLTC	ONAF	1	1996
	Three phase two-winding transformer 120 MVA, 161 kV	OLTC	OFAF	1	1994
	Three phase two-winding transformer 375 MVA, 161 kV	OCTC	OFAF	1	1994
Power transformers of voltages 330-400 kV			total	5	
Various s/s	Three phase three-winding autotransformer 280 MVA, 400/150 kV	OLTC in the common neutral	OFAF	3	1992-1993
	Three phase two-winding transformer 360 MVA, 400 kV	OCTC	OFAF	1	1997
Meliti-Achlada SES	Three phase two-winding transformer 400 MVA, 400 kV	OCTC	OFAF	1	2004

HUNGARY

Power transformers of voltages up to 66 kV			total	8	
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 2 MVA, 10 kV	OCTC	ONAN	1	1965
	Three phase two-winding transformer 1 MVA, 35kV	OCTC	ONAN	3	1976-1985
	Three phase two-winding transformer 2.5 MVA, 35 kV	OCTC	ONAN	4	1975



ICELAND

Power transformers of voltages 220-330 kV				total	2
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Vatnsfell HPP	Three phase two-winding transformer 50 MVA, 230 kV	OCTC	ONAF	2	2000

LATVIA

Power transformers of voltages up to 66 kV				total	4
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Industrial enterprise Daugava	Three phase two-winding transformer 6.3 MVA, 20 kV	OLTC	ONAN	2	1997
Latvenergo TPP-3	Three phase two-winding transformer 20 MVA, 15,75/16 kV	OLTC	ONAF	1	2007
	Three phase two-winding transformer 20 MVA, 17 kV	OLTC	ONAF	1	2007

Power transformers of voltages 110-220 kV				total	1
Latvenergo TPP-3	Three phase two-winding transformer 180 MVA, 121/15,75 kV	OCTC	ONAF	1	2007

Power transformers of voltages 220-330 kV				total	21
Various s/s of Latvian T&D systems	Three phase three-winding autotransformer 125 MVA, 330/110 kV	OLTC	OFAF	11	1970-1990
Rizhskaaya-1 TPP, Various s/s of Latvian T&D systems	Three phase three-winding autotransformer 200 MVA, 330/110 kV	OLTC	OFAF	6	1973-1987
Latvenergo/Plyavinskaya HPP	Three phase two-winding transformer 215 MVA, 330 kV		OFAF	2	1994, 2012
Rizhskaaya HPP	Three phase two-winding transformer 250 MVA, 330 kV		OFAF	2	1974-1975

Power transformers of voltages 330-400 kV				total	1
Latvenergo TPP-3	Three phase two-winding transformer 333 MVA, 347/17 kV	ONAF	ONAF	1	2007

Special transformers				total	8
Municipal enterprises	Three phase two-winding converter transformer 2 MVA, 10 kV	ONAF	OCTC	8	2008

LITHUANIA

Power transformers of voltages up to 66 kV				total	13
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Western distribution network, Shilainaj, s/s	Three phase two-winding transformer 2,5 MVA, 35 kV	OLTC	ONAN	1	2006
Kaunasskaya TPP	Three phase two-winding transformer 25 MVA, 10 kV	OLTC	ONAF	1	1976
Various s/s	Three phase two-winding transformer 25 MVA, 35 kV	OLTC	ONAF	3	1970-1972
Ignalinskaya NPP	Three phase two-winding transformer 63 MVA, 35 kV	OLTC	ONAF	8	1982-1987



Power transformers of voltages 110-220 kV			total	19	
Shilas s/s, Distribution network, Seduva s/s	Three phase three-winding transformer 10 MVA, 110 kV	OLTC	ONAF	3	2001-2006
Klaipeda s/s, Shaulyai s/s	Three phase two-winding transformer 16 MVA, 110 kV	OLTC	ONAF	3	2001-2009
Werstern distribution network, Yakaj s/s	Three phase two-winding transformer 25 MVA, 110 kV	OLTC	ONAF	4	2005
Petrashunai TPP	Three phase three-winding transformer 25 MVA, 110 kV	OLTC	ONAF	2	2001
Various s/s	Three phase two-winding transformer (split LV winding) 25 MVA, 110 kV	OLTC	ONAF	2	2001
Werstern distribution network, Taika s/s	Three phase two-winding transformer 32 MVA, 110 kV	OLTC	ONAF	2	2005-2007
Werstern distribution network, Shilainaj, s/s	Three phase three-winding transformer 40 MVA, 110 kV	OLTC	ONAF	2	2005
Kaunasskaya TPP	Three phase two-winding transformer (split LV winding) 125 MVA, 110 kV	OLTC	OFAF	1	1976

Power transformers of voltages 330-400 kV			total	44	
Various s/s	Three phase three-winding autotransformer 125 MVA, 330/110 kV	OLTC	OFAF	8	1970-1990, 2011-2012
	Three phase two-winding transformer 200 MVA, 330 kV		OFAF	1	1970
LITGRID / Klaipeda s/s	Three phase three-winding autotransformer 250 MVA, 330/110 kV	OLTC	OFAF	2	2010, 2012
Kruonis PSP, Ignalinskaya NPP, Panevezhis s/s and others	Three phase three-winding autotransformer 200 MVA, 330/110 kV	OLTC in MV line	OFAF	14	1971-2001, 2011
Kruonis PSP, Litovskaya TPP, Pribaltiyskaya TPP, Kashyadorskaya TPP and others	Three phase two-winding transformer 250 MVA, 330 kV		OFAF	9	1984-2001
Various s/s	Three phase two-winding transformer 400 MVA, 330 kV		OFAF	4	1971-1987
Iberdrola Ingenieria y Construcccion S.A./Elektrenai CCGT	Three phase two-winding transformer 532 MVA, 330 kV		OFAF	1	2010
Ignalinskaya NPP	Three phase two-winding transformer 1000 MVA, 330 kV		ODWF	5	1984-1994

Power transformers of voltages 500-750 kV			total	4	
Ignalinskaya NPP	Single phase three-winding autotransformer 333 MVA, 750/330 kV	OLTC in the common neutral	OFAF	4	1987-1988

Special transformers			total	3	
Municipal enterprise	Three phase two-winding converter transformer 2 MVA, 10 kV	OCTC	ONAN	3	2005

Electrical reactors			total	1	
Ignalinskaya HPP	Three phase controllable reactor 180 MVA _r , 330 kV, 198 A		ONAF	1	2007



MACEDONIA

Power transformers of voltages up to 66 kV				total	5
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Negotino TPP, Bitola TPP	Three phase two-winding transformer (split LV winding) 25 MVA, 35 kV	OLTC	ONAF	5	1975-1984
Power transformers of voltages 110-220 kV				total	2
Negotino TPP, Bitola TPP	Three phase two-winding transformer 250 MVA, 110 kV		OFAF	2	1976-1978

POLAND

Power transformers of voltages up to 66 kV				total	23
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 4 MVA, 35 kV	OCTC	ONAN	23	1990
Power transformers of voltages 110-220 kV				total	6
Belkhatuv TPP	Three phase two-winding transformer 426 MVA, 220 kV		OFAF	6	1979-1982
Power transformers of voltages 330-400 kV				total	4
Belkhatuv TPP	Three phase two-winding transformer 426 MVA, 420 kV		OFAF	2	1983-1985
Kozenitsa TPP	Three phase two-winding transformer 630 MVA, 420 kV		OFAF	2	1977-1978
Power transformers of voltages 500-750 kV				total	7
Zhesuv s/s	Single phase three-winding autotransformer 417 MVA, 750/400 kV	OLTC	OFAF	7	1984-1985

ROMANIA

Power transformers of voltages 110-220 kV				total	12
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase three-winding transformer 80 MVA, 110 kV	OLTC in the common neutral	ONAF	2	1989-1990
Ludush TPP and others	Three phase two-winding transformer 250 MVA, 220 kV		OFAF	10	1966-1970
Power transformers of voltages 330-400 kV				total	10
Zheleznyi Vorota HPP, Various s/s	Single phase three-winding autotransformer 133 MVA, 400/220 kV		OFAF	10	1970-1983
Power transformers of voltages 500-750 kV				total	7
Isakcha s/s	Single phase three-winding autotransformer 417 MVA, 750/400 kV	OLTC in the common neutral	OFAF	7	1985-1987
Electrical reactors				total	1
Suceava s/s	Three phase controllable reactor 100 MVA, 400 kV, 144.3 A		OFAF	1	2008



SERBIA & MONTENEGRO

Power transformers of voltages up to 66 kV				total	16
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 2 MVA, 10 kV	OCTC	ONAN	12	1991
Kostolats TPP, Novi Sad TPP and others	Three phase two-winding transformer others (split LV winding) 25 MVA, 35 kV	OLTC	ONAF	4	1976-1980
Power transformers of voltages 110-220 kV				total	17
Belgrad-5 s/s	Three phase three-winding transformer 100 MVA, 110 kV	OLTC	OFAF	1	1999
Novi Sad TPP	Three phase two-winding transformer 200 MVA, 110 kV	OCTC	OFAF	2	1979-1981
Kostolats-3 TPP and others	Three phase two-winding transformer 250 MVA, 110 kV		OFAF	3	1976-1978
Smederevo s/s	Three phase three-winding transformer 75 MVA, 121 kV	OLTC	ONAF	1	2000
Plevle TPP, Peruchitsa TPP	Three phase three-winding autotransformer 125 MVA, 220/110 kV	OLTC in MV line	OFAF	3	1976-1979
Various s/s	Three phase two-winding transformer (split LV winding) 160 MVA, 220 kV	OLTC	OFAF	2	1980-1981
Sisak-2 TPP, Rieka TPP	Three phase three-winding autotransformer 200 MVA, 220/110 kV	OLTC	OFAF	2	1974-1975
Sisak-2 TPP, Rieka TPP, Plevle TPP	Three phase three-winding transformer 250 MVA, 220 kV		OFAF	3	1975-1978

SLOVAKIA

Power transformers of voltages up to 66 kV				total	1234
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Various s/s	Three phase two-winding transformer 0.63-1.0 MVA, 35 kV	OCTC	ONAN	1234	1975-1991
Power transformers of voltages 110-220 kV				total	1
Various s/s of Middle-Slovakian T&D	Three phase three-winding autotransformer system 200 MVA, 220/110 kV	OLTC	OFAF	1	1989
Power transformers of voltages 330-400 kV				total	36
Trenchin HPP, Various s/s of East-Slovakian and West-Slovakian T&D systems	Three phase three-winding autotransformer 250 MVA 400/110 kV	OLTC	OFAF	19	1981-1991
Various s/s of West-Slovakian T&D system	Single phase three-winding autotransformer 133 MVA, 400/220 kV		OFAF	7	1980
Bogunitse NPP	Three phase two-winding transformer 250 MVA, 420 kV		OFAF	4	1983-1985
Voyany TPP	Three phase two-winding transformer 125 MVA, 400 kV		OFAF	6	1973-1974



EUROPE

SPAIN

Power transformers of voltages 110-220 kV				total	4
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Teyma-Abengoa/Solacor El Carpio I,II	Three phase two-winding transformer 62,5 MVA, 132 kV	OLTC	ONAN	2	2011
Abengoa Solar, EON/ Helioenergy 1&2	Three phase two-winding transformer 60 MVA, 220 kV	OLTC	ONAN	2	2010
Power transformers of voltages 110-220 kV				total	4
Teyma-Abengoa/Solacor El Carpio I,II	Three phase two-winding transformer 62,5 MVA, 220 kV	OLTC	ONAN	4	2011

SWITZERLAND

Power transformers of voltages up to 66 kV				total	4
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Cern	Three phase two-winding transformer 38 MVA, 66 kV	OLTC	ONAN	4	1991

TURKEY

Power transformers of voltages up to 66 kV				total	1
Installation Site	Brief Technical Data	Tap Changer	Cooling	Q-ty	Year
Orkhaneli TPP	Three phase two-winding transformer 40 MVA, 35 kV	OLTC	ONAF	1	1986
Power transformers of voltages 110-220 kV				total	31
Iskenderun s/s	Three phase two-winding transformer (split LV winding) 16 MVA, 150 kV	OLTC	ONAF	4	1971-1973
	Three phase three-winding transformer 70 MVA, 150 kV	OLTC	ONAF	2	1978
Orkhaneli TPP and others	Three phase two-winding transformer 32 MVA, 150 kV	OLTC	ONAF	5	1971-1977
Orkhaneli TPP	Three phase two-winding transformer (split LV winding) 40 MVA, 150 kV	OLTC	ONAF	1	1985
	Three phase two-winding transformer 250 MVA, 150 kV		OFAF	2	1980-1984
Torul HPP	Three phase two-winding transformer 61 MVA, 154 kV	OCTC	ONAF	2	2005
Karahan s/s, Mersin s/s Seihan s/s	Three phase two-winding transformer 63 MVA, 154 kV	OLTC	ONAF	4	2000
Kadincik s/s	Three phase two-winding transformer 66 MVA, 161 kV		OFAF	1	2000
Berke Dam & HPP	Single phase two-winding transformer 62.5 MVA, 163 kV	OCTC	OFAF	10	2000
Power transformers of voltages 330-400 kV				total	3
Iskenderun s/s	Three phase two-winding transformer 125 MVA, 400 kV		OFAF	3	1972

APPENDIX

ABBREVIATIONS

NPP	Nuclear power plant	s/s	substation
HEPSS	Hydroelectric pumped-storage station	TPP	Thermal power plant
HPS	Hydropower station	OLTC	on-load tap changer
HPP	Hydropower plant	OCTC	off-circuit tap changer
CCPP	Combined cycle power plant	PJSC	Public Joint Stock Company
CCGT	Combined cycle gas turbine plant	CIS	Commonwealth of Independent States

COOLING SYSTEM TYPE

ONAN	oil natural, air natural	OFWF	oil forced, water forced
ONAF	oil natural, air forced	ODAF	oil directed, air forced
OFAF	oil forced, air forced	ODWF	oil directed, water forced

CONTACTS

ZAPOROZHTRANSFORMATOR PJSC

3, Dnepropetrovskoe shosse,
Zaporozhye, 69600 Ukraine
fax +38 061 2703232
e-mail: office@ztr.ua
www.ztr.ua

SALES DEPARTMENT

tel. +38 061 270 30 33
fax +38 061 270 39 39
e-mail: sales@ztr.ua

FOR SUPPLIES OUTSIDE CIS COUNTRIES

ZTR-ENESTA Handelsgesellschaft m.b.H.
Joint Venture between ZTR and VAIT
Strasserau 6, 4020, Linz
Austria

tel.: + 43 732 780 43 11
fax: + 43 732 780 41311
e-mail: ztr-enesta@vait.com
www.ztr-enesta.com

REPRESENTATIVE OFFICE IN THE RUSSIAN FEDERATION

MOSCOW:

build. 1, 17/2 Bolshaya Yakimanka str.,
119180 Moscow, Russian Federation

tel. + 7 495 745 88 28
fax +7 495 745 88 42
ztr-secr@esgr.ru

FOR SUPPLIES IN THE REPUBLIC OF KAZAKHSTAN AND MIDDLE ASIA

ALMATY:

Office 701, 151/115,
Business centre "Alatau",
050009, Almaty, Republic of Kazakhstan

tel.: +7 727 333 46 92 (93, 94)
fax +7 727 333 46 96
office@ztr.kz



REFERENCE LIST

2013

RELIABLE PARTNER
RELIABLE EQUIPMENT

ZTR

ZAPOROZHTRANSFORMATOR

