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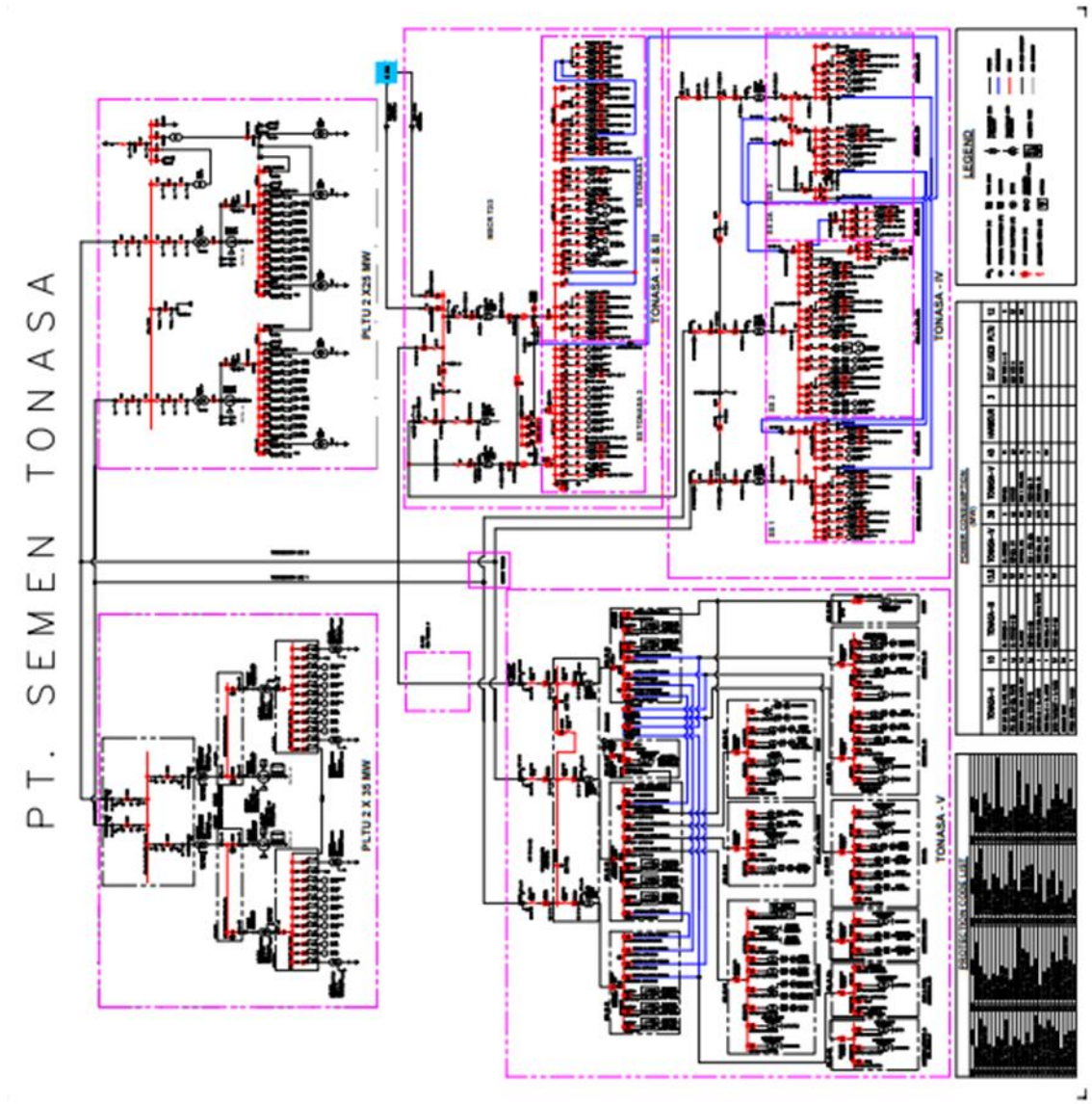
P T . S E M E N T O N A S A
PLTU 2 X 25 MW
PLTU 2 X 35 MW
TONASA - II & III
TONASA - IV
TONASA - V
LEGEND

Lampiran 2 Hasil Load Flow Konfigurasi 1

Project:	ETAP	Page:	1
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLTU 100%

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
524RE	0.400	93.897	-9.5	0.000	0.000	0.154	0.116	B.TD.53.2	-0.154	-0.116	296.8	80.0	
580 OB 01	70.000	94.947	-5.6	0.000	0.000	0.000	0.000	CON L1	-22.415	-6.672	203.2	95.8	
								CON L2	-22.232	-5.564	199.1	97.0	
								BT1.1	10.980	-1.090	95.8	-99.5	
								BT2.1	16.631	4.698	150.1	96.2	
								580 OB 02	17.037	8.628	165.9	89.2	
580 OB 02	70.000	94.947	-5.6	0.000	0.000	0.000	0.000	Bus489	2.624	4.137	42.6	53.6	
								BT3.1	14.413	4.491	131.1	95.5	
								580 OB 01	-17.037	-8.628	165.9	89.2	
581SS51MB01	6.300	98.184	-8.0	0.000	0.000	0.000	0.000	Bus14	6.211	3.810	680.1	85.2	
								B.51HF01	0.031	-3.008	280.7	-1.0	
								B.51HF02	0.024	-2.914	272.0	-0.8	
								B.51HF03	0.024	-2.907	271.3	-0.8	
								BT1.2	-10.959	1.545	1033.0	-99.0	
								SB.SS51.1	4.668	3.474	543.1	80.2	
581SS52MB01	6.300	96.076	-9.2	0.000	0.000	0.000	0.000	B.52HF01	0.023	-2.783	265.5	-0.8	
								B.52HF02	0.023	-2.783	265.5	-0.8	
								B.52HF03	0.030	-2.880	274.7	-1.0	
								582ER55AMB01	9.065	6.499	1064.0	81.3	
								582ER56MB01	2.796	1.911	323.1	82.6	
								582ER57MB01	3.633	2.815	438.4	79.0	
								Bus19	1.011	0.800	123.0	78.4	
								583MB01	0.000	0.000	0.0	0.0	
								BT2.2	-16.581	-3.579	1618.0	97.7	
581SS53MB01	6.300	96.144	-8.7	0.000	0.000	0.000	0.000	B.53HF01	0.029	-2.883	274.8	-1.0	
								B.53HF02	0.022	-2.786	265.6	-0.8	
								BT3.2	-14.376	-3.638	1413.5	96.9	
								SB.SS53.1	8.760	5.705	996.4	83.8	
								SB.SS53.2	5.565	3.601	631.8	84.0	
582ER51LV01	0.400	94.969	-9.5	0.000	0.000	0.925	0.694	B.TD.51.1	-0.925	-0.694	1757.0	80.0	
582ER51MB01	6.300	97.433	-8.1	0.000	0.000	0.000	0.000	B.TD.51.1	0.931	0.735	111.5	78.5	

Project:	ETAP	Page:	2
Location:	19.0.1C	Date:	21-11-2022
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Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								B.LSCR1	0.640	0.396	70.8	85.0	
								B.LSCR2	0.640	0.396	70.8	85.0	
								582ER52AMB01	-2.211	-1.527	252.7	82.3	
582ER52ALV01	0.400	94.446	-10.0	0.000	0.000	1.185	0.889	B.TD.52.1	-1.185	-0.889	2263.4	80.0	
582ER52AMB01	6.300	97.487	-8.1	0.000	0.000	0.000	0.000	582ER53MB01	1.239	0.978	148.4	78.5	
								B.TD.52.1	1.192	0.957	143.7	78.0	
								582ER51MB01	2.212	1.525	252.6	82.3	
								SB.SS51.1	-4.643	-3.460	544.3	80.2	
582ER53LV01	0.400	94.545	-9.8	0.000	0.000	1.073	0.805	B.TD.53.1	-1.073	-0.805	2047.4	80.0	
582ER53MB01	6.300	97.422	-8.1	0.000	0.000	0.000	0.000	582ER52AMB01	-1.239	-0.984	148.8	78.3	
								B.TD.53.1	1.081	0.861	130.0	78.2	
								B.TD.53.2	0.157	0.123	18.8	78.8	
582ER54ALV01	0.400	93.206	-10.4	0.000	0.000	0.958	0.719	B.TD.54.1	-0.958	-0.719	1855.1	80.0	
582ER54BLV01	0.400	93.776	-10.0	0.000	0.000	0.598	0.448	B.TD.54.2	-0.598	-0.448	1150.1	80.0	
582ER54MB01	6.300	95.691	-8.8	0.000	0.000	0.000	0.000	B.FF.532FN11	0.134	0.083	15.1	85.1	
								B.TR.RMCT.	0.220	0.127	24.4	86.6	
								B.RMIDF	3.945	2.450	444.7	85.0	
								B.RMMD	2.866	1.776	322.9	85.0	
								B.TD.54.1	0.963	0.765	117.8	78.3	
								B.TD.54.2	0.600	0.470	73.0	78.7	
								SB.SS53.1	-8.729	-5.671	996.9	83.9	
582ER55ALV01	0.400	91.412	-11.9	0.000	0.000	1.500	1.125	B.TD.55A.1	-1.500	-1.125	2959.8	80.0	
582ER55ALV02	0.400	92.789	-11.0	0.000	0.000	1.005	0.754	B.TD.55A.2	-1.005	-0.754	1954.2	80.0	
582ER55AMB01	6.300	95.428	-9.3	0.000	0.000	0.000	0.000	B.TR-EP	1.310	1.032	160.2	78.6	
								B.TR.FPF	1.039	0.622	116.3	85.8	
								B.TR.IDF2	1.280	0.813	145.6	84.4	
								B.TR.IDF1	1.280	0.813	145.7	84.4	
								B.TR.KLN.DRV	0.857	0.547	97.7	84.3	
								B.TD.55A.2	1.010	0.805	124.1	78.2	
								B.TD.55A.1	1.512	1.242	187.9	77.3	
								B.TD.55B.1	0.729	0.577	89.3	78.4	
								581SS52MB01	-9.019	-6.452	1064.9	81.3	
582ER56LV01	0.400	92.852	-11.0	0.000	0.000	1.086	0.815	B.TD.56.1	-1.086	-0.815	2110.5	80.0	

Project:	ETAP	Page:	3
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Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
582ER56MB01	6.300	95.839	-9.3	0.000	0.000	0.000	0.000	B.TR.BFCM	0.151	0.087	16.7	86.6	
								B.TD.56.1	1.095	0.874	134.0	78.2	
								B.CMF	0.979	0.606	110.1	85.0	
								B.CMT	0.566	0.350	63.7	85.1	
								581SS52MB01	-2.792	-1.918	323.8	82.4	
582ER57LV01	0.400	92.203	-11.5	0.000	0.000	1.327	0.995	B.TD.57.1	-1.327	-0.995	2597.0	80.0	
582ER57LV02	0.400	95.682	-9.3	0.000	0.000	0.002	0.001	B.TD.57.2	-0.002	-0.001	3.3	80.0	
582ER57LV03	0.690	92.768	-11.2	0.000	0.000	0.959	0.719	B.VFD7	-0.959	-0.719	1081.6	80.0	
582ER57LV04	0.690	92.928	-11.1	0.000	0.000	0.809	0.607	B.VFD8	-0.809	-0.607	910.4	80.0	
582ER57MB01	6.300	95.688	-9.3	0.000	0.000	0.000	0.000	B.TD.57.2	0.002	0.001	0.2	82.7	
								B.TD.57.1	1.336	1.086	164.9	77.6	
								B.TR.EPFC	0.208	0.123	23.1	86.0	
								B.TR.BFC	0.300	0.177	33.4	86.1	
								B.TR.GC	1.777	1.425	218.2	78.0	
								581SS52MB01	-3.622	-2.813	439.2	79.0	
582ER58A	6.300	97.746	-8.1	0.000	0.000	0.000	0.000	B.TD.58A.2	0.646	0.506	76.9	78.7	
								B.TD.58A.1	1.015	0.816	122.0	77.9	
								B.C.MILL.T1	2.908	1.802	320.7	85.0	
								B.FF.C.MILL.1	1.421	0.567	143.4	92.9	
								B.FMCL1	0.201	0.118	21.9	86.3	
								Bus14	-6.191	-3.808	681.4	85.2	
582ER58ALV01	0.400	94.364	-10.0	0.000	0.000	1.005	0.754	B.TD.58A.1	-1.005	-0.754	1922.3	80.0	
582ER58ALV02	0.400	95.627	-9.3	0.000	0.000	0.642	0.482	B.TD.58A.2	-0.642	-0.482	1211.6	80.0	
582ER58B	6.300	95.857	-8.8	0.000	0.000	0.000	0.000	B.TD.58B.1	1.020	0.811	124.6	78.3	
								B.C.MILL.T2	2.908	1.802	327.1	85.0	
								B.FF.C.MILL.2	1.423	0.860	158.9	85.6	
								B.FMCL2	0.202	0.119	22.4	86.1	
								SB.SS53.2	-5.553	-3.592	632.2	84.0	
582ER58BLV01	0.400	93.108	-10.4	0.000	0.000	1.012	0.759	B.TD.58B.1	-1.012	-0.759	1961.9	80.0	
582ER59	6.300	95.737	-9.2	0.000	0.000	0.000	0.000	B.TD.59.1	1.007	0.812	123.8	77.9	
								Bus19	-1.007	-0.812	123.8	77.9	
582ER59LV01	0.400	92.321	-11.2	0.000	0.000	0.998	0.749	B.TD.59.1	-0.998	-0.749	1950.4	80.0	
583MB01	6.300	96.076	-9.2	0.000	0.000	0.000	0.000	B.1D1	0.000	0.000	0.0	0.0	

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Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								581SS52MB01	0.000	0.000	0.0	0.0	
B.51HF01	6.300	98.239	-8.0	0.000	0.000	0.030	-3.009	581SS51MB01	-0.030	3.009	280.7	-1.0	
B.51HF02	6.300	98.237	-8.0	0.000	0.000	0.023	-2.915	581SS51MB01	-0.023	2.915	271.9	-0.8	
B.51HF03	6.300	98.237	-8.0	0.000	0.000	0.022	-2.908	581SS51MB01	-0.022	2.908	271.3	-0.8	
B.52HF01	6.300	96.121	-9.2	0.000	0.000	0.022	-2.784	581SS52MB01	-0.022	2.784	265.5	-0.8	
B.52HF02	6.300	96.121	-9.2	0.000	0.000	0.022	-2.784	581SS52MB01	-0.022	2.784	265.5	-0.8	
B.52HF03	6.300	96.123	-9.2	0.000	0.000	0.028	-2.881	581SS52MB01	-0.028	2.881	274.7	-1.0	
B.53HF01	6.300	96.159	-8.7	0.000	0.000	0.029	-2.883	581SS53MB01	-0.029	2.883	274.8	-1.0	
B.53HF02	6.300	96.159	-8.7	0.000	0.000	0.022	-2.787	581SS53MB01	-0.022	2.787	265.6	-0.8	
B.C.MILL.T1	6.300	97.695	-8.1	0.000	0.000	2.906	1.801	582ER58A	-2.906	-1.801	320.7	85.0	
B.C.MILL.T2	6.300	95.785	-8.8	0.000	0.000	2.906	1.801	582ER58B	-2.906	-1.801	327.1	85.0	
B.CMF	6.300	95.742	-9.3	0.000	0.000	0.978	0.606	582ER56MB01	-0.978	-0.606	110.2	85.0	
B.CMT	6.300	95.699	-9.2	0.000	0.000	0.565	0.350	582ER56MB01	-0.565	-0.350	63.7	85.0	
B.FF.532FN11	6.300	95.632	-8.8	0.000	0.000	0.134	0.083	582ER54MB01	-0.134	-0.083	15.2	85.0	
B.FF.C.MILL1	6.300	97.722	-8.1	0.000	0.000	0.000	0.000	582ER58A	-1.421	-0.566	143.4	92.9	
								B.VFD10	1.421	0.566	143.4	92.9	
B.FF.C.MILL2	6.300	95.825	-8.8	0.000	0.000	0.000	0.000	582ER58B	-1.422	-0.859	158.9	85.6	
								B.VFD13	1.422	0.859	158.9	85.6	
B.FMCL1	6.300	97.737	-8.1	0.000	0.000	0.000	0.000	582ER58A	-0.201	-0.118	21.9	86.3	
								B.VFD11	0.201	0.118	21.9	86.3	
B.FMCL2	6.300	95.847	-8.8	0.000	0.000	0.000	0.000	582ER58B	-0.202	-0.120	22.4	86.0	
								B.VFD14	0.202	0.120	22.4	86.0	
B.INT1	6.300	98.184	-8.0	0.000	0.000	0.000	0.000	SB.SS51.1	0.000	0.000	0.0	0.0	
B.INT2	6.300	98.053	-8.0	0.000	0.000	0.000	0.000	Bus14	0.000	0.000	0.0	0.0	
B.I.SCR1	6.300	97.360	-8.1	0.000	0.000	0.639	0.396	582ER51MB01	-0.639	-0.396	70.8	85.0	
B.I.SCR2	6.300	97.345	-8.1	0.000	0.000	0.639	0.396	582ER51MB01	-0.639	-0.396	70.8	85.0	
B.PLN	70.000	94.947	-5.6	0.000	0.000	0.000	0.000	Bus489	-2.624	-4.137	42.6	53.6	
								Bus103	2.624	4.137	42.6	53.6	
B.RMIDF	6.300	95.353	-8.9	0.000	0.000	3.934	2.438	582ER54MB01	-3.934	-2.438	444.8	85.0	
B.RMMD	6.300	95.606	-8.8	0.000	0.000	2.864	1.775	582ER54MB01	-2.864	-1.775	323.0	85.0	
B.TD1	6.300	96.076	-9.2	0.000	0.000	0.000	0.000	583MB01	0.000	0.000	0.0	0.0	
B.TD.51.1	6.300	97.405	-8.1	0.000	0.000	0.000	0.000	582ER51MB01	-0.931	-0.735	111.6	78.5	
								582ER51LV01	0.931	0.735	111.6	78.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
B.TD.52.1	6.300	97.451	-8.1	0.000	0.000	0.000	0.000	582ER52AMB01	-1.191	-0.957	143.7	78.0	
								582ER52ALV01	1.191	0.957	143.7	78.0	
B.TD.53.1	6.300	97.389	-8.1	0.000	0.000	0.000	0.000	582ER53MB01	-1.081	-0.860	130.0	78.2	
								582ER53LV01	1.081	0.860	130.0	78.2	
B.TD.53.2	6.300	97.287	-8.1	0.000	0.000	0.000	0.000	582ER53MB01	-0.157	-0.124	18.8	78.5	
								524RF	0.157	0.124	18.8	78.5	
B.TD.54.1	6.300	95.661	-8.8	0.000	0.000	0.000	0.000	582ER54MB01	-0.963	-0.765	117.8	78.3	
								582ER54ALV01	0.963	0.765	117.8	78.3	
B.TD.54.2	6.300	95.672	-8.8	0.000	0.000	0.000	0.000	582ER54MB01	-0.600	-0.470	73.0	78.7	
								582ER54BLV01	0.600	0.470	73.0	78.7	
B.TD.55A.1	6.300	95.365	-9.3	0.000	0.000	0.000	0.000	582ER55AMB01	-1.511	-1.242	187.9	77.2	
								582ER55ALV01	1.511	1.242	187.9	77.2	
B.TD.55A.2	6.300	95.378	-9.3	0.000	0.000	0.000	0.000	582ER55AMB01	-1.010	-0.805	124.1	78.2	
								582ER55ALV02	1.010	0.805	124.1	78.2	
B.TD.55B.1	6.300	95.350	-9.3	0.000	0.000	0.000	0.000	582ER55AMB01	-0.729	-0.577	89.3	78.4	
								Bus22	0.729	0.577	89.3	78.4	
B.TD.56.1	6.300	95.785	-9.3	0.000	0.000	0.000	0.000	582ER56MB01	-1.095	-0.874	134.0	78.1	
								582ER56LV01	1.095	0.874	134.0	78.1	
B.TD.57.1	6.300	95.662	-9.3	0.000	0.000	0.000	0.000	582ER57MB01	-1.336	-1.086	164.9	77.6	
								582ER57LV01	1.336	1.086	164.9	77.6	
B.TD.57.2	6.300	95.688	-9.3	0.000	0.000	0.000	0.000	582ER57MB01	-0.002	-0.001	0.2	80.0	
								582ER57LV02	0.002	0.001	0.2	80.0	
B.TD.58A.1	6.300	97.709	-8.1	0.000	0.000	0.000	0.000	582ER58A	-1.014	-0.816	122.1	77.9	
								582ER58ALV01	1.014	0.816	122.1	77.9	
B.TD.58A.2	6.300	97.723	-8.1	0.000	0.000	0.000	0.000	582ER58A	-0.646	-0.506	76.9	78.7	
								582ER58ALV02	0.646	0.506	76.9	78.7	
B.TD.58B.1	6.300	95.832	-8.8	0.000	0.000	0.000	0.000	582ER58B	-1.020	-0.811	124.6	78.3	
								582ER58BLV01	1.020	0.811	124.6	78.3	
B.TD.59.1	6.300	95.718	-9.2	0.000	0.000	0.000	0.000	582ER59	-1.007	-0.812	123.8	77.9	
								582ER59LV01	1.007	0.812	123.8	77.9	
B.TR-EP	6.300	95.306	-9.3	0.000	0.000	0.000	0.000	582ER55AMB01	-1.309	-1.031	160.2	78.5	
								Bus5	1.309	1.031	160.2	78.5	
								&Bus6					

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
B.TR.BFC	6.300	95.668	-9.3	0.000	0.000	0.000	0.000	582ER57MB01	-0.300	-0.177	33.4	86.1	
								B.VFD6	0.300	0.177	33.4	86.1	
B.TR.BFCM	6.300	95.744	-9.2	0.000	0.000	0.000	0.000	582ER56MB01	-0.151	-0.088	16.7	86.4	
								B.VFD4	0.151	0.088	16.7	86.4	
B.TR.EPF	6.300	95.339	-9.3	0.000	0.000	0.000	0.000	582ER55AMB01	-1.038	-0.622	116.3	85.8	
								B.VFD1	1.038	0.622	116.3	85.8	
B.TR.EPFC	6.300	95.675	-9.3	0.000	0.000	0.000	0.000	582ER57MB01	-0.208	-0.123	23.1	85.9	
								B.VFD5	0.208	0.123	23.1	85.9	
B.TR.GC	6.300	95.667	-9.3	0.000	0.000	0.000	0.000	582ER57MB01	-1.776	-1.425	218.2	78.0	
								B.VFD7	1.776	1.425	218.2	78.0	
								&B.VFD8					
B.TR.IDF1	6.300	95.316	-9.3	0.000	0.000	0.000	0.000	582ER55AMB01	-1.279	-0.813	145.7	84.4	
								B.VFD3	1.279	0.813	145.7	84.4	
B.TR.IDF2	6.300	95.331	-9.3	0.000	0.000	0.000	0.000	582ER55AMB01	-1.279	-0.813	145.7	84.4	
								B.VFD2	1.279	0.813	145.7	84.4	
B.TR.KI.N.DRV	6.300	95.388	-9.3	0.000	0.000	0.000	0.000	582ER55AMB01	-0.857	-0.547	97.7	84.3	
								Bus1	0.857	0.547	97.7	84.3	
								&Bus2					
B.TR.RMCL	6.300	95.677	-8.8	0.000	0.000	0.000	0.000	582ER54MB01	-0.220	-0.127	24.4	86.5	
								B.VFD9	0.220	0.127	24.4	86.5	
B.VFD1	0.400	93.280	-11.1	0.000	0.000	1.034	0.577	B.TR.EPF	-1.034	-0.577	1832.1	87.3	
								VFD1	1.034	0.577	1832.1	87.3	
B.VFD2	6.300	91.420	-12.6	0.000	0.000	1.269	0.708	B.TR.IDF2	-1.269	-0.708	145.7	87.3	
								VFD2	1.269	0.708	145.7	87.3	
B.VFD3	6.300	91.404	-12.6	0.000	0.000	1.269	0.708	B.TR.IDF1	-1.269	-0.708	145.7	87.3	
								VFD3	1.269	0.708	145.7	87.3	
B.VFD4	0.400	93.860	-10.3	0.000	0.000	0.149	0.083	B.TR.BFCM	-0.149	-0.083	262.9	87.3	
								VFD4	0.149	0.083	262.9	87.3	
B.VFD5	0.690	93.312	-10.9	0.000	0.000	0.206	0.115	B.TR.EPFC	-0.206	-0.115	211.2	87.3	
								VFD5	0.206	0.115	211.2	87.3	
B.VFD6	0.690	93.540	-10.7	0.000	0.000	0.298	0.166	B.TR.BFC	-0.298	-0.166	304.7	87.3	
								VFD6	0.298	0.166	304.7	87.3	
B.VFD7	0.690	92.768	-11.2	0.000	0.000	0.000	0.000	582ER57LV03	0.959	0.719	1081.6	80.0	

Project:		ETAP		Page:	7
Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:			Study Case: LF	Revision:	Base
Filename:	Sistem Tonasa 2022			Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								B.VFD8	-0.959	-0.719	1081.6	80.0	
								&B.TR.GC					
B.VFD8	0.690	92.928	-11.1	0.000	0.000	0.000	0.000	582ER57LV04	0.809	0.607	910.4	80.0	
								B.TR.GC	-0.809	-0.607	910.4	80.0	
								&B.VFD7					
B.VFD9	0.400	94.434	-9.7	0.000	0.000	0.219	0.122	B.TR.RMCT.	-0.219	-0.122	383.6	87.3	
								VFD9	0.219	0.122	383.6	87.3	
B.VFD10	6.300	96.114	-10.0	0.000	0.000	1.416	0.510	B.FF.C.MILL1	-1.416	-0.510	143.4	94.1	
								VFD10	1.416	0.510	143.4	94.1	
B.VFD11	0.690	95.805	-9.3	0.000	0.000	0.200	0.111	B.FMCL1	-0.200	-0.111	199.8	87.3	
								VFD11	0.200	0.111	199.8	87.3	
B.VFD13	6.000	93.475	-10.8	0.000	0.000	1.416	0.790	B.FF.C.MILL2	-1.416	-0.790	166.9	87.3	
								VFD13	1.416	0.790	166.9	87.3	
B.VFD14	0.690	93.464	-10.3	0.000	0.000	0.200	0.111	B.FMCL2	-0.200	-0.111	204.8	87.3	
								VFD14	0.200	0.111	204.8	87.3	
BT1.1	70.000	94.947	-5.6	0.000	0.000	0.000	0.000	BT1.2	10.980	-1.090	95.8	-99.5	
								580 OB 01	-10.980	1.090	95.8	-99.5	
BT1.2	6.300	98.203	-7.9	0.000	0.000	0.000	0.000	581SS51MB01	10.962	-1.545	1033.0	-99.0	
								BT1.1	-10.962	1.545	1033.0	-99.0	
BT2.1	70.000	94.947	-5.6	0.000	0.000	0.000	0.000	BT2.2	16.631	4.698	150.1	96.2	
								580 OB 01	-16.631	-4.698	150.1	96.2	
BT2.2	6.300	96.107	-9.2	0.000	0.000	0.000	0.000	581SS52MB01	16.586	3.582	1618.0	97.7	
								BT2.1	-16.586	-3.582	1618.0	97.7	
BT3.1	70.000	94.947	-5.6	0.000	0.000	0.000	0.000	BT3.2	14.413	4.491	131.1	95.5	
								580 OB 02	-14.413	-4.491	131.1	95.5	
BT3.2	6.300	96.169	-8.7	0.000	0.000	0.000	0.000	581SS53MB01	14.379	3.639	1413.4	96.9	
								BT3.1	-14.379	-3.639	1413.4	96.9	
* BTGE.G01.BB6KV.01	6.300	102.000	0.0	20.391	10.124	0.000	0.000	BTGE.G01.BB6KV.02	20.391	10.124	2045.4	89.6	
BTGE.G01.BB6KV.02	6.300	101.257	-0.2	0.000	0.000	0.000	0.000	BTGE.G01.BB6KV.01	-20.273	-9.988	2045.4	89.7	
								DIST.EBB70KV.01	20.273	9.988	2045.4	89.7	
* BTGE.G02.BB6KV.01	6.300	102.000	0.0	20.391	10.124	0.000	0.000	BTGE.G02.BB6KV.02	20.391	10.124	2045.4	89.6	
BTGE.G02.BB6KV.02	6.300	101.257	-0.2	0.000	0.000	0.000	0.000	BTGE.G02.BB6KV.01	-20.273	-9.988	2045.4	89.7	
								DIST.EBB70KV.04	20.273	9.988	2045.4	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
* BTGN.G01.BB11KV.01	11.000	102.000	0.0	18.330	10.550	0.000	0.000	C-02-GCB-01	18.330	10.550	1088.3	86.7	
* BTGN.G02.BB11KV.01	11.000	102.000	0.0	18.330	10.550	0.000	0.000	BTGN.G02.BB11KV.02	18.330	10.550	1088.3	86.7	
BTGN.G02.BB11KV.02	11.000	101.768	0.0	0.000	0.000	0.000	0.000	BTGN.G02.BB11KV.01	-18.297	-10.513	1088.3	86.7	
								DIST.NBB70KV.04	18.297	10.513	1088.3	86.7	
Bus1	0.725	94.303	-10.1	0.000	0.000	0.427	0.265	Bus2	-0.427	-0.265	424.5	85.0	
								&B.TR.KLN.DRV					
Bus2	0.725	94.303	-10.1	0.000	0.000	0.427	0.265	B.TR.KLN.DRV	-0.427	-0.265	424.5	85.0	
								&Bus1					
Bus2- 1100	70.000	94.866	-5.6	0.000	0.000	0.000	0.000	Bus360 - 830	0.000	0.000	0.0	0.0	
Bus4	6.300	93.597	-8.8	0.000	0.000	0.000	0.000	SG4	-0.969	-0.641	113.8	83.4	
								Bus236	0.969	0.641	113.8	83.4	
Bus5	0.400	93.246	-10.7	0.000	0.000	0.652	0.489	Bus6	-0.652	-0.489	1261.8	80.0	
								&B.TR-EP					
Bus6	0.400	93.246	-10.7	0.000	0.000	0.652	0.489	B.TR-EP	-0.652	-0.489	1261.8	80.0	
								&Bus5					
Bus7	6.300	93.597	-8.8	0.000	0.000	0.000	0.000	SG4	-0.969	-0.641	113.8	83.4	
								Bus238	0.969	0.641	113.8	83.4	
Bus9	6.300	93.603	-8.8	0.000	0.000	0.000	0.000	SG4	-0.278	-0.209	34.1	79.9	
								Bus248	0.278	0.209	34.1	79.9	
Bus10	6.300	93.647	-8.8	0.000	0.000	0.000	0.000	SG4	-0.374	-0.232	43.1	85.0	
								Bus252	0.374	0.232	43.1	85.0	
Bus11	6.300	93.646	-8.8	0.000	0.000	0.000	0.000	SG4	-0.387	-0.240	44.6	85.0	
								Bus253	0.387	0.240	44.6	85.0	
Bus12	6.300	93.679	-8.8	0.000	0.000	0.000	0.000	SG4	-1.406	-0.871	161.8	85.0	
								Bus507	1.406	0.871	161.8	85.0	
Bus13	6.300	93.679	-8.8	0.000	0.000	0.000	0.000	SG4	-1.406	-0.871	161.8	85.0	
								Bus508	1.406	0.871	161.8	85.0	
Bus14	6.300	98.053	-8.0	0.000	0.000	0.000	0.000	B.INT2	0.000	-0.001	0.1	0.0	
								581SS51MB01	-6.205	-3.819	681.0	85.2	
								582ER58A	6.205	3.820	681.0	85.2	
Bus15	70.000	94.825	-5.6	0.000	0.000	0.000	0.000	GANTRY 2	-14.891	-9.299	152.7	84.8	
								Bus209	14.891	9.299	152.7	84.8	
Bus16	6.300	93.689	-8.8	0.000	0.000	0.000	0.000	SG4	-0.438	-0.328	53.5	80.1	

Project:	ETAP	Page:	9
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Bus512	0.438	0.328	53.5	80.1	
Bus17	6.300	93.633	-8.8	0.000	0.000	0.000	0.000	SG4	-0.438	-0.327	53.5	80.1	
								Bus515	0.438	0.327	53.5	80.1	
Bus18	70.000	94.825	-5.6	0.000	0.000	0.000	0.000	GANTRY 1	-14.982	-9.852	156.0	83.6	
								Bus217	14.982	9.852	156.0	83.6	
Bus19	6.300	95.966	-9.2	0.000	0.000	0.000	0.000	581SS52MB01	-1.010	-0.812	123.8	77.9	
								582ER59	1.010	0.812	123.8	77.9	
								SS53MV08->B.582ER59~	0.000	0.000	0.0	0.0	
Bus22	0.400	93.023	-10.8	0.000	0.000	0.726	0.544	B.TD.55B.1	-0.726	-0.544	1407.2	80.0	
Bus24	70.000	94.866	-5.6	0.000	0.000	0.000	0.000	Bus103	-2.623	-4.160	42.8	53.3	
								Bus360 - 830	2.623	4.160	42.8	53.3	
Bus31	0.400	92.584	-8.7	0.000	0.000	0.411	0.309	Bus32	-0.411	-0.309	801.8	80.0	
Bus32	0.400	96.991	-9.5	0.000	0.000	0.000	0.000	Bus31	0.436	0.317	801.8	80.9	
								Bus33	-0.436	-0.317	801.8	80.9	
Bus33	6.300	93.575	-8.8	0.000	0.000	0.000	0.000	Bus32	0.437	0.327	53.5	80.1	
								Bus34	-0.437	-0.327	53.5	80.1	
Bus34	6.300	93.575	-8.8	0.000	0.000	0.000	0.000	ESG1	-0.437	-0.327	53.5	80.1	
								Bus33	0.437	0.327	53.5	80.1	
Bus35	6.000	98.315	-8.8	0.000	0.000	0.000	0.000	ESG1	0.000	0.000	0.0	0.0	
Bus42	0.400	92.572	-8.4	0.000	0.000	0.411	0.309	Bus43	-0.411	-0.309	801.7	80.0	
Bus43	0.400	96.978	-9.2	0.000	0.000	0.000	0.000	Bus42	0.436	0.317	801.7	80.9	
								Bus44	-0.436	-0.317	801.7	80.9	
Bus44	6.300	93.161	-8.7	0.000	0.000	0.000	0.000	Bus43	0.437	0.323	53.4	80.4	
								Bus45	-0.437	-0.323	53.4	80.4	
Bus45	6.300	93.161	-8.7	0.000	0.000	0.000	0.000	SG4A	-0.437	-0.323	53.4	80.4	
								Bus44	0.437	0.323	53.4	80.4	
Bus50	0.400	92.572	-8.4	0.000	0.000	0.411	0.309	Bus51	-0.411	-0.309	801.7	80.0	
Bus51	0.400	96.978	-9.2	0.000	0.000	0.000	0.000	Bus50	0.436	0.317	801.7	80.9	
								Bus52	-0.436	-0.317	801.7	80.9	
Bus52	6.300	93.161	-8.7	0.000	0.000	0.000	0.000	Bus51	0.437	0.323	53.4	80.4	
								Bus53	-0.437	-0.323	53.4	80.4	
Bus53	6.300	93.161	-8.7	0.000	0.000	0.000	0.000	SG4A	-0.437	-0.323	53.4	80.4	
								Bus52	0.437	0.323	53.4	80.4	

Project:	ETAP	Page:	10
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:		Revision:	Base
Filename: Sistem Tonasa 2022	Study Case: LF	Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus56	6.300	93.207	-8.7	0.000	0.000	1.406	0.871	Bus57	-1.406	-0.871	162.6	85.0	
Bus57	6.300	93.207	-8.7	0.000	0.000	0.000	0.000	SG4A	-1.406	-0.871	162.6	85.0	
								Bus56	1.406	0.871	162.6	85.0	
Bus58	6.300	93.207	-8.7	0.000	0.000	1.406	0.871	Bus59	-1.406	-0.871	162.6	85.0	
Bus59	6.300	93.207	-8.7	0.000	0.000	0.000	0.000	SG4A	-1.406	-0.871	162.6	85.0	
								Bus58	1.406	0.871	162.6	85.0	
Bus95	70.000	94.866	-5.6	0.000	0.000	0.000	0.000	Bus101	2.623	4.160	42.8	53.3	
								Bus353	-2.623	-4.160	42.8	53.3	
Bus96	70.000	94.825	-5.6	0.000	0.000	0.000	0.000	Bus273	9.026	6.264	95.6	82.2	
								Bus312	-6.404	-2.093	58.6	95.1	
								Bus101	-2.622	-4.171	42.9	53.2	
Bus97	70.000	94.825	-5.6	0.000	0.000	0.000	0.000	Bus168	9.886	6.995	105.3	81.6	
								Bus209	-9.886	-6.995	105.3	81.6	
Bus101	70.000	94.825	-5.6	0.000	0.000	0.000	0.000	Bus95	-2.622	-4.171	42.9	53.2	
								Bus96	2.622	4.171	42.9	53.2	
Bus103	70.000	94.947	-5.6	0.000	0.000	0.000	0.000	Bus24	2.624	4.137	42.6	53.6	
								B.PLN	-2.624	-4.137	42.6	53.6	
Bus168	6.300	94.966	-7.9	0.000	0.000	0.000	0.000	SG1	9.865	6.411	1135.3	83.8	
								Bus97	-9.865	-6.411	1135.3	83.8	
Bus171	6.300	94.855	-7.9	0.000	0.000	0.000	0.000	Bus188	0.449	0.335	54.1	80.2	
								Bus191	0.449	0.335	54.2	80.1	
								SG2	-0.898	-0.671	108.3	80.1	
Bus172	6.300	94.618	-7.9	0.000	0.000	0.957	0.593	SG2	-0.957	-0.593	109.1	85.0	
Bus174	6.300	94.797	-7.9	0.000	0.000	1.408	0.873	SG2	-1.408	-0.873	160.2	85.0	
Bus175	6.300	94.783	-7.9	0.000	0.000	1.738	1.077	SG2	-1.738	-1.077	197.7	85.0	
Bus176	6.300	94.752	-7.9	0.000	0.000	0.000	0.000	SG2	-0.285	-0.214	34.5	79.9	
								Bus177	0.285	0.214	34.5	79.9	
Bus177	0.400	98.381	-8.5	0.000	0.000	0.000	0.000	Bus178	0.284	0.209	517.1	80.6	
								Bus176	-0.284	-0.209	517.1	80.6	
Bus178	0.400	95.542	-8.0	0.000	0.000	0.274	0.205	Bus177	-0.274	-0.205	517.1	80.0	
Bus182	6.300	94.805	-7.9	0.000	0.000	0.000	0.000	SG2	-0.229	-0.173	27.8	79.9	
								Bus183	0.229	0.173	27.8	79.9	
Bus183	0.400	98.498	-8.5	0.000	0.000	0.000	0.000	Bus184	0.229	0.169	416.6	80.5	

Project:		ETAP		Page:	11
Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:				Revision:	Base
Filename:	Sistem Tonasa 2022		Study Case: LF	Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Bus182	-0.229	-0.169	416.6	80.5	
Bus184	0.400	96.211	-8.0	0.000	0.000	0.222	0.167	Bus183	-0.222	-0.167	416.6	80.0	
Bus185	6.300	94.815	-7.9	0.000	0.000	0.000	0.000	SG2	-0.185	-0.139	22.3	79.8	
								Bus186	0.185	0.139	22.3	79.8	
Bus186	0.400	98.607	-8.4	0.000	0.000	0.000	0.000	Bus187	0.184	0.136	335.2	80.4	
								Bus185	-0.184	-0.136	335.2	80.4	
Bus187	0.400	96.767	-8.1	0.000	0.000	0.180	0.135	Bus186	-0.180	-0.135	335.2	80.0	
Bus188	6.300	94.832	-7.9	0.000	0.000	0.000	0.000	Bus171	-0.449	-0.336	54.2	80.1	
								Bus189	0.449	0.336	54.2	80.1	
Bus189	0.400	98.293	-8.7	0.000	0.000	0.000	0.000	Bus190	0.448	0.325	812.6	80.9	
								Bus188	-0.448	-0.325	812.6	80.9	
Bus190	0.400	93.828	-7.8	0.000	0.000	0.423	0.317	Bus189	-0.423	-0.317	812.6	80.0	
Bus191	6.300	94.837	-7.9	0.000	0.000	0.000	0.000	Bus171	-0.449	-0.336	54.2	80.1	
								Bus192	0.449	0.336	54.2	80.1	
Bus192	0.400	98.298	-8.7	0.000	0.000	0.000	0.000	Bus193	0.448	0.325	812.6	80.9	
								Bus191	-0.448	-0.325	812.6	80.9	
Bus193	0.400	93.832	-7.8	0.000	0.000	0.423	0.317	Bus192	-0.423	-0.317	812.6	80.0	
Bus196	6.300	94.797	-7.9	0.000	0.000	1.406	0.871	SG3	-1.406	-0.871	159.9	85.0	
Bus198	6.300	94.783	-7.9	0.000	0.000	1.738	1.077	SG3	-1.738	-1.077	197.7	85.0	
Bus202	6.300	94.812	-7.9	0.000	0.000	0.000	0.000	SG3	-0.449	-0.335	54.2	80.1	
								Bus203	0.449	0.335	54.2	80.1	
Bus203	0.400	98.272	-8.6	0.000	0.000	0.000	0.000	Bus204	0.447	0.325	812.4	80.9	
								Bus202	-0.447	-0.325	812.4	80.9	
Bus204	0.400	93.808	-7.8	0.000	0.000	0.422	0.317	Bus203	-0.422	-0.317	812.4	80.0	
Bus205	6.300	94.850	-7.9	0.000	0.000	0.000	0.000	SG3	-0.556	-0.414	67.0	80.2	
								Bus206	0.556	0.414	67.0	80.2	
Bus206	0.400	98.299	-8.7	0.000	0.000	0.000	0.000	Bus207	0.555	0.400	1004.3	81.1	
								Bus205	-0.555	-0.400	1004.3	81.1	
Bus207	0.400	92.777	-7.7	0.000	0.000	0.516	0.387	Bus206	-0.516	-0.387	1004.3	80.0	
Bus209	70.000	94.825	-5.6	0.000	0.000	0.000	0.000	Bus15	-14.891	-9.299	152.7	84.8	
								Bus97	9.886	6.995	105.3	81.6	
								Bus217	5.005	2.304	47.9	90.8	
Bus215	6.300	93.786	-8.8	0.000	0.000	0.000	0.000	SG4	13.541	8.925	1584.8	83.5	

Project:	ETAP	Page:	12
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Bus216	-13.541	-8.925	1584.8	83.5	
Bus216	70.000	94.825	-5.6	0.000	0.000	0.000	0.000	Bus215	13.583	10.064	147.0	80.4	
								Bus217	-13.583	-10.064	147.0	80.4	
Bus217	70.000	94.825	-5.6	0.000	0.000	0.000	0.000	Bus18	-14.982	-9.852	156.0	83.6	
								Bus216	13.583	10.064	147.0	80.4	
								Bus209	-5.005	-2.304	47.9	90.8	
								Bus312	6.404	2.093	58.6	95.1	
Bus219	6.300	93.545	-8.8	0.000	0.000	0.000	0.000	SG4	-0.705	-0.529	86.4	80.0	
								Bus230	0.353	0.265	43.2	80.0	
								Bus233	0.353	0.265	43.2	80.0	
Bus220	6.300	93.646	-8.8	0.000	0.000	0.000	0.000	SG4	-0.290	-0.187	33.8	84.1	
								Bus221	0.290	0.187	33.8	84.1	
Bus221	1.725	92.257	-9.7	0.000	0.000	0.289	0.179	Bus220	-0.289	-0.179	123.4	85.0	
								VFD7	0.289	0.179	123.4	85.0	
Bus222	6.300	93.680	-8.8	0.000	0.000	0.000	0.000	SG4	-0.290	-0.187	33.8	84.1	
								Bus223	0.290	0.187	33.8	84.1	
Bus223	1.725	92.291	-9.7	0.000	0.000	0.289	0.179	Bus222	-0.289	-0.179	123.3	85.0	
								VFD8	0.289	0.179	123.3	85.0	
Bus224	6.300	93.654	-8.8	0.000	0.000	0.348	0.145	SG4	-0.348	-0.145	36.8	92.3	
Bus228	0.400	93.483	-8.8	0.000	0.000	0.336	0.252	Bus229	-0.336	-0.252	647.7	80.0	
Bus229	0.400	97.041	-9.5	0.000	0.000	0.000	0.000	Bus228	0.351	0.257	647.7	80.7	
								Bus230	-0.351	-0.257	647.7	80.7	
Bus230	6.300	93.545	-8.8	0.000	0.000	0.000	0.000	Bus229	0.353	0.265	43.2	80.0	
								Bus219	-0.353	-0.265	43.2	80.0	
Bus231	0.400	93.483	-8.8	0.000	0.000	0.336	0.252	Bus232	-0.336	-0.252	647.7	80.0	
Bus232	0.400	97.041	-9.5	0.000	0.000	0.000	0.000	Bus231	0.351	0.257	647.7	80.7	
								Bus233	-0.351	-0.257	647.7	80.7	
Bus233	6.300	93.545	-8.8	0.000	0.000	0.000	0.000	Bus232	0.353	0.265	43.2	80.0	
								Bus219	-0.353	-0.265	43.2	80.0	
Bus236	6.300	93.597	-8.8	0.000	0.000	0.000	0.000	Bus237	0.969	0.641	113.8	83.4	
								Bus4	-0.969	-0.641	113.8	83.4	
Bus237	1.725	91.457	-10.5	0.000	0.000	0.965	0.598	Bus236	-0.965	-0.598	415.5	85.0	
								VFD15	0.965	0.598	415.5	85.0	

Project:		ETAP		Page:	13
Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:			Study Case: LF	Revision:	Base
Filename:	Sistem Tonasa 2022			Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus238	6.300	93.597	-8.8	0.000	0.000	0.000	0.000	Bus239	0.969	0.641	113.8	83.4	
								Bus7	-0.969	-0.641	113.8	83.4	
Bus239	1.725	91.457	-10.5	0.000	0.000	0.965	0.598	Bus238	-0.965	-0.598	415.5	85.0	
								VFD16	0.965	0.598	415.5	85.0	
Bus248	6.300	93.603	-8.8	0.000	0.000	0.000	0.000	Bus249	0.278	0.209	34.1	79.9	
								Bus9	-0.278	-0.209	34.1	79.9	
Bus249	0.400	97.189	-9.4	0.000	0.000	0.000	0.000	Bus250	0.277	0.204	510.9	80.6	
								Bus248	-0.277	-0.204	510.9	80.6	
Bus250	0.400	94.384	-8.9	0.000	0.000	0.267	0.200	Bus249	-0.267	-0.200	510.9	80.0	
Bus252	6.300	93.647	-8.8	0.000	0.000	0.374	0.232	Bus10	-0.374	-0.232	43.1	85.0	
Bus253	6.300	93.646	-8.8	0.000	0.000	0.387	0.240	Bus11	-0.387	-0.240	44.6	85.0	
Bus261	0.400	91.561	-8.6	0.000	0.000	0.503	0.377	Bus262	-0.503	-0.377	991.2	80.0	
Bus262	0.400	97.011	-9.6	0.000	0.000	0.000	0.000	Bus261	0.540	0.390	991.2	81.1	
								Bus263	-0.540	-0.390	991.2	81.1	
Bus263	6.300	93.607	-8.8	0.000	0.000	0.000	0.000	Bus262	0.541	0.403	66.1	80.2	
								Bus267	-0.541	-0.403	66.1	80.2	
Bus264	0.400	91.561	-8.6	0.000	0.000	0.503	0.377	Bus265	-0.503	-0.377	991.2	80.0	
Bus265	0.400	97.011	-9.6	0.000	0.000	0.000	0.000	Bus264	0.540	0.390	991.2	81.1	
								Bus266	-0.540	-0.390	991.2	81.1	
Bus266	6.300	93.607	-8.8	0.000	0.000	0.000	0.000	Bus265	0.541	0.403	66.1	80.2	
								Bus267	-0.541	-0.403	66.1	80.2	
Bus267	6.300	93.607	-8.8	0.000	0.000	0.000	0.000	SG4	-1.083	-0.806	132.2	80.2	
								Bus263	0.541	0.403	66.1	80.2	
								Bus266	0.541	0.403	66.1	80.2	
Bus272	6.300	95.251	-7.7	0.000	0.000	0.000	0.000	SG5	9.008	5.783	1029.9	84.2	
								Bus273	-9.008	-5.783	1029.9	84.2	
Bus273	70.000	94.825	-5.6	0.000	0.000	0.000	0.000	Bus272	9.026	6.264	95.6	82.2	
								Bus96	-9.026	-6.264	95.6	82.2	
Bus278	6.300	95.195	-7.7	0.000	0.000	1.722	1.068	SG7	-1.722	-1.068	195.1	85.0	
Bus279	6.300	95.195	-7.7	0.000	0.000	1.722	1.068	SG7	-1.722	-1.068	195.1	85.0	
Bus280	6.300	95.229	-7.7	0.000	0.000	0.268	0.166	SG7	-0.268	-0.166	30.4	85.0	
Bus284	6.300	95.222	-7.7	0.000	0.000	0.000	0.000	SG7	-0.560	-0.417	67.2	80.2	
								Bus285	0.560	0.417	67.2	80.2	

Project:	ETAP	Page:	14
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus285	0.400	98.685	-8.5	0.000	0.000	0.000	0.000	Bus286	0.559	0.403	1008.3	81.1	
								Bus284	-0.559	-0.403	1008.3	81.1	
Bus286	0.400	93.140	-7.5	0.000	0.000	0.521	0.390	Bus285	-0.521	-0.390	1008.3	80.0	
Bus287	6.300	95.235	-7.7	0.000	0.000	0.000	0.000	SG7	-0.288	-0.217	34.7	79.9	
								Bus288	0.288	0.217	34.7	79.9	
Bus288	0.400	98.883	-8.3	0.000	0.000	0.000	0.000	Bus289	0.287	0.211	519.8	80.6	
								Bus287	-0.287	-0.211	519.8	80.6	
Bus289	0.400	96.029	-7.8	0.000	0.000	0.277	0.207	Bus288	-0.277	-0.207	519.8	80.0	
Bus290	6.300	95.230	-7.7	0.000	0.000	0.000	0.000	Bus307	-0.365	-0.274	44.0	80.0	
								Bus291	0.365	0.274	44.0	80.0	
Bus291	0.400	98.790	-8.4	0.000	0.000	0.000	0.000	Bus292	0.364	0.266	659.3	80.7	
								Bus290	-0.364	-0.266	659.3	80.7	
Bus292	0.400	95.168	-7.7	0.000	0.000	0.348	0.261	Bus291	-0.348	-0.261	659.3	80.0	
Bus300	6.300	95.195	-7.7	0.000	0.000	1.722	1.068	SG6	-1.722	-1.068	195.1	85.0	
Bus301	6.300	95.195	-7.7	0.000	0.000	1.722	1.068	SG6	-1.722	-1.068	195.1	85.0	
Bus302	6.300	95.229	-7.7	0.000	0.000	0.268	0.166	SG6	-0.268	-0.166	30.3	85.0	
Bus307	6.300	95.246	-7.7	0.000	0.000	0.000	0.000	Bus290	0.365	0.274	43.9	80.0	
								Bus310	0.365	0.274	43.9	80.0	
								SG6	-0.731	-0.548	87.9	80.0	
Bus308	0.400	95.170	-7.7	0.000	0.000	0.348	0.261	Bus309	-0.348	-0.261	659.4	80.0	
Bus309	0.400	98.792	-8.4	0.000	0.000	0.000	0.000	Bus308	0.364	0.266	659.4	80.7	
								Bus310	-0.364	-0.266	659.4	80.7	
Bus310	6.300	95.232	-7.7	0.000	0.000	0.000	0.000	Bus307	-0.365	-0.274	44.0	80.0	
								Bus309	0.365	0.274	44.0	80.0	
Bus312	70.000	94.825	-5.6	0.000	0.000	0.000	0.000	Bus96	6.404	2.093	58.6	95.1	
								Bus217	-6.404	-2.093	58.6	95.1	
Bus353	70.000	94.866	-5.6	0.000	0.000	0.000	0.000	Bus360 - 830	-2.623	-4.160	42.8	53.3	
								Bus95	2.623	4.160	42.8	53.3	
Bus360 - 830	70.000	94.866	-5.6	0.000	0.000	0.000	0.000	Bus353	2.623	4.160	42.8	53.3	
								Bus24	-2.623	-4.160	42.8	53.3	
								Bus2- 1100	0.000	0.000	0.0	0.0	
Bus489	70.000	94.947	-5.6	0.000	0.000	0.000	0.000	B.PLN	2.624	4.137	42.6	53.6	
								580 OB 02	-2.624	-4.137	42.6	53.6	

Project:		ETAP		Page:	15
Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:			Study Case: LF	Revision:	Base
Filename:	Sistem Tonasa 2022			Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus507	6.300	93.679	-8.8	0.000	0.000	1.406	0.871	Bus12	-1.406	-0.871	161.8	85.0	
Bus508	6.300	93.679	-8.8	0.000	0.000	1.406	0.871	Bus13	-1.406	-0.871	161.8	85.0	
Bus512	6.300	93.689	-8.8	0.000	0.000	0.000	0.000	Bus513	0.438	0.328	53.5	80.1	
								Bus16	-0.438	-0.328	53.5	80.1	
Bus513	0.400	97.108	-9.5	0.000	0.000	0.000	0.000	Bus514	0.437	0.318	802.8	80.9	
								Bus512	-0.437	-0.318	802.8	80.9	
Bus514	0.400	92.696	-8.7	0.000	0.000	0.412	0.309	Bus513	-0.412	-0.309	802.8	80.0	
Bus515	6.300	93.633	-8.8	0.000	0.000	0.000	0.000	Bus516	0.438	0.327	53.5	80.1	
								Bus17	-0.438	-0.327	53.5	80.1	
Bus516	0.400	97.051	-9.5	0.000	0.000	0.000	0.000	Bus517	0.436	0.317	802.3	80.9	
								Bus515	-0.436	-0.317	802.3	80.9	
Bus517	0.400	92.641	-8.7	0.000	0.000	0.412	0.309	Bus516	-0.412	-0.309	802.3	80.0	
C-02-GCB-01	11.000	101.768	0.0	0.000	0.000	0.000	0.000	BTGN.G01.BB11KV.01	-18.297	-10.513	1088.3	86.7	
								DIST.NBB70KV.01	18.297	10.513	1088.3	86.7	
CON L1	70.000	94.947	-5.6	0.000	0.000	0.000	0.000	GANTRY 1	-22.415	-6.672	203.2	95.8	
								580 OB 01	22.415	6.672	203.2	95.8	
CON L2	70.000	94.947	-5.6	0.000	0.000	0.000	0.000	GANTRY 2	-22.232	-5.564	199.1	97.0	
								580 OB 01	22.232	5.564	199.1	97.0	
DIST.EBB22KV.01	22.000	98.391	-3.4	0.000	0.000	0.000	0.000	DIST.EBB22KV.02	0.968	0.469	28.7	90.0	
								DIST.EBB70KV.06	-0.968	-0.469	28.7	90.0	
DIST.EBB22KV.02	22.000	98.386	-3.4	0.000	0.000	0.000	0.000	DIST.EBB22KV.01	-0.968	-0.469	28.7	90.0	
								DIST.EBB22KV.05	0.532	0.258	15.8	90.0	
								DIST.EBB22KV.04	0.436	0.211	12.9	90.0	
DIST.EBB22KV.04	22.000	98.386	-3.4	0.000	0.000	0.436	0.211	DIST.EBB22KV.02	-0.436	-0.211	12.9	90.0	
DIST.EBB22KV.05	22.000	98.383	-3.4	0.000	0.000	0.532	0.258	DIST.EBB22KV.02	-0.532	-0.258	15.8	90.0	
DIST.EBB70KV.01	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	BTGF.G01.BB6KV.02	-20.230	-8.805	184.1	91.7	
								DIST.EBB70KV.02	20.230	8.805	184.1	91.7	
DIST.EBB70KV.02	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	DIST.EBB70KV.01	-20.230	-8.805	184.1	91.7	
								DIST.EBB70KV.03	20.230	8.805	184.1	91.7	
DIST.EBB70KV.03	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	DIST.EBB70KV.02	-20.230	-8.805	184.1	91.7	
								DIST.EBB70KV.05	-20.230	-8.805	184.1	91.7	
								DIST.EBB70KV.08	19.746	8.566	179.6	91.7	
								DIST.EBB70KV.09	19.746	8.566	179.6	91.7	

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Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								DIST.EBB70KV.07	0.969	0.479	9.0	89.6	
DIST.EBB70KV.04	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	BTGE.G02.BB6KV.02	-20.230	-8.805	184.1	91.7	
								DIST.EBB70KV.05	20.230	8.805	184.1	91.7	
DIST.EBB70KV.05	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	DIST.EBB70KV.04	-20.230	-8.805	184.1	91.7	
								DIST.EBB70KV.03	20.230	8.805	184.1	91.7	
DIST.EBB70KV.06	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	DIST.EBB22KV.01	0.969	0.479	9.0	89.6	
								DIST.EBB70KV.07	-0.969	-0.479	9.0	89.6	
DIST.EBB70KV.07	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	DIST.EBB70KV.03	-0.969	-0.479	9.0	89.6	
								DIST.EBB70KV.06	0.969	0.479	9.0	89.6	
DIST.EBB70KV.08	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	DIST.EBB70KV.03	-19.746	-8.566	179.6	91.7	
								DIST.L1BB70KV	19.746	8.566	179.6	91.7	
DIST.EBB70KV.09	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	DIST.EBB70KV.03	-19.746	-8.566	179.6	91.7	
								DIST.L2BB70KV	19.746	8.566	179.6	91.7	
DIST.L1BB70KV	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	GANTRY 1	38.104	18.754	354.3	89.7	
								DIST.EBB70KV.08	-19.746	-8.566	179.6	91.7	
								DIST.NBB70KV.06	-18.359	-10.188	175.2	87.4	
DIST.L2BB70KV	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	GANTRY 2	37.900	17.016	346.6	91.2	
								DIST.EBB70KV.09	-19.746	-8.566	179.6	91.7	
								DIST.NBB70KV.07	-18.154	-8.450	167.1	90.7	
DIST.NBB70KV.01	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	C-02-GCB-01	-18.256	-9.319	171.0	89.1	
								DIST.NBB70KV.02	18.256	9.319	171.0	89.1	
DIST.NBB70KV.02	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	DIST.NBB70KV.01	-18.256	-9.319	171.0	89.1	
								DIST.NBB70KV.03	18.256	9.319	171.0	89.1	
DIST.NBB70KV.03	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	DIST.NBB70KV.02	-18.256	-9.319	171.0	89.1	
								DIST.NBB70KV.05	-18.256	-9.319	171.0	89.1	
								DIST.NBB70KV.06	18.359	10.188	175.2	87.4	
								DIST.NBB70KV.07	18.154	8.450	167.1	90.7	
DIST.NBB70KV.04	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	BTGN.G02.BB11KV.02	-18.256	-9.319	171.0	89.1	
								DIST.NBB70KV.05	18.256	9.319	171.0	89.1	
DIST.NBB70KV.05	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	DIST.NBB70KV.04	-18.256	-9.319	171.0	89.1	
								DIST.NBB70KV.03	18.256	9.319	171.0	89.1	
DIST.NBB70KV.06	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	DIST.NBB70KV.03	-18.359	-10.188	175.2	87.4	
								DIST.L1BB70KV	18.359	10.188	175.2	87.4	

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Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
DIST.NBB70KV.07	70.000	98.852	-2.9	0.000	0.000	0.000	0.000	DIST.NBB70KV.03	-18.154	-8.450	167.1	90.7	
								DIST.L2BB70KV	18.154	8.450	167.1	90.7	
ESG1	6.300	93.633	-8.8	0.000	0.000	0.000	0.000	SG4	-0.438	-0.326	53.4	80.2	
								Bus34	0.438	0.326	53.4	80.2	
								Bus35	0.000	-0.001	0.1	0.0	
GANTRY 1	70.000	95.052	-5.5	0.000	0.000	0.000	0.000	Bus18	14.998	9.880	155.8	83.5	
								CON L1	22.429	6.705	203.1	95.8	
								DIST.L1BB70KV	-37.426	-16.585	355.2	91.4	
GANTRY 2	70.000	95.043	-5.5	0.000	0.000	0.000	0.000	Bus15	14.906	9.325	152.6	84.8	
								CON L2	22.245	5.595	199.1	97.0	
								DIST.L2BB70KV	-37.150	-14.920	347.4	92.8	
SB.SS51.1	6.300	98.184	-8.0	0.000	0.000	0.000	0.000	B.INT1	0.000	-0.001	0.1	0.0	
								582ER52AMB01	4.668	3.474	543.2	80.2	
								581SS51MB01	-4.668	-3.474	543.1	80.2	
SB.SS53.1	6.300	96.144	-8.7	0.000	0.000	0.000	0.000	582ER54MB01	8.760	5.707	996.5	83.8	
								SS53MV11->581SS53MV04 ~ 581SS53MB01	0.000 -8.760	-0.001 -5.705	0.1 996.4	0.0 83.8	
SB.SS53.2	6.300	96.144	-8.7	0.000	0.000	0.000	0.000	582ER58B	5.565	3.602	631.9	84.0	
								SS53MV09->581SS53MV05 ~ 581SS53MB01	0.000 -5.565	-0.001 -3.601	0.1 631.8	0.0 84.0	
SG1	6.300	94.855	-7.9	0.000	0.000	0.000	0.000	Bus168	-9.856	-6.436	1137.3	83.7	
								SG2	5.705	3.738	659.0	83.6	
								SG3	4.151	2.698	478.3	83.8	
SG2	6.300	94.855	-7.9	0.000	0.000	0.000	0.000	Bus172	0.959	0.593	109.0	85.1	
								Bus176	0.285	0.213	34.4	80.1	
								Bus182	0.230	0.172	27.7	80.0	
								Bus185	0.185	0.138	22.3	80.0	
								Bus174	1.409	0.873	160.1	85.0	
								Bus175	1.739	1.078	197.7	85.0	
								SG1	-5.705	-3.738	659.0	83.6	
								Bus171	0.898	0.671	108.3	80.1	
SG3	6.300	94.855	-7.9	0.000	0.000	0.000	0.000	Bus196	1.407	0.872	159.9	85.0	
								Bus198	1.739	1.078	197.7	85.0	

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Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Bus202	0.449	0.335	54.1	80.1	
								Bus205	0.556	0.414	67.0	80.2	
								SG1	-4.151	-2.698	478.3	83.8	
SG4	6.300	93.691	-8.8	0.000	0.000	0.000	0.000	Bus219	0.706	0.528	86.3	80.1	
								Bus4	0.970	0.641	113.7	83.4	
								Bus7	0.970	0.641	113.7	83.4	
								Bus9	0.278	0.208	34.0	80.1	
								Bus10	0.374	0.231	43.0	85.1	
								Bus11	0.388	0.240	44.6	85.1	
								Bus267	1.084	0.806	132.1	80.2	
								Bus12	1.406	0.871	161.8	85.0	
								Bus13	1.406	0.871	161.8	85.0	
								Bus16	0.438	0.327	53.5	80.1	
								Bus17	0.438	0.327	53.5	80.2	
								FSG1	0.438	0.325	53.4	80.3	
								SG4A	3.706	2.398	431.8	84.0	
								Bus215	-13.531	-8.933	1585.9	83.5	
								Bus220	0.290	0.186	33.7	84.2	
								Bus222	0.290	0.186	33.8	84.1	
								Bus224	0.348	0.144	36.8	92.4	
SG4A	6.300	93.219	-8.7	0.000	0.000	0.000	0.000	SG4	-3.686	-2.389	431.8	83.9	
								Bus45	0.437	0.323	53.4	80.4	
								Bus53	0.437	0.323	53.4	80.4	
								Bus57	1.406	0.871	162.6	85.0	
								Bus59	1.406	0.871	162.6	85.0	
SG5	6.300	95.246	-7.7	0.000	0.000	0.000	0.000	Bus272	-9.008	-5.784	1030.0	84.1	
								SG7	4.563	2.935	522.0	84.1	
								SG6	4.445	2.849	508.0	84.2	
SG6	6.300	95.246	-7.7	0.000	0.000	0.000	0.000	Bus300	1.723	1.068	195.1	85.0	
								Bus301	1.723	1.068	195.1	85.0	
								Bus302	0.268	0.166	30.3	85.0	
								SG5	-4.445	-2.849	508.0	84.2	
								Bus307	0.731	0.548	87.9	80.0	

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Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLTU 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SG7	6.300	95.246	-7.7	0.000	0.000	0.000	0.000	Bus278	1.723	1.068	195.1	85.0	
								Bus279	1.723	1.068	195.1	85.0	
								Bus280	0.268	0.166	30.3	85.0	
								Bus284	0.560	0.417	67.2	80.2	
								Bus287	0.288	0.216	34.6	79.9	
								SG5	-4.563	-2.935	522.0	84.1	
SS53MV09->581SS53MV05 ~	6.300	96.144	-8.7	0.000	0.000	0.000	0.000	SB.SS53.2	0.000	0.000	0.0	0.0	
SS53MV11->581SS53MV04 ~	6.300	96.144	-8.7	0.000	0.000	0.000	0.000	SB.SS53.1	0.000	0.000	0.0	0.0	
SS53MV08->B.582ER59~	6.300	95.966	-9.2	0.000	0.000	0.000	0.000	Bus19	0.000	0.000	0.0	0.0	
VFD1	0.400	100.000	0.0	0.931	0.577	0.000	0.000	EP FAN~	0.931	0.577	1580.3	85.0	
VFD2	6.300	100.000	0.0	1.142	0.708	0.000	0.000	KIDF.2~	1.142	0.708	123.1	85.0	
VFD3	6.300	100.000	0.0	1.142	0.708	0.000	0.000	KIDF.1~	1.142	0.708	123.1	85.0	
VFD4	0.400	100.000	0.0	0.134	0.083	0.000	0.000	CMBF 545FN05~	0.134	0.083	228.2	85.0	
VFD5	0.690	100.000	0.0	0.185	0.115	0.000	0.000	M544FN02~	0.185	0.115	182.2	85.0	
VFD6	0.690	100.000	0.0	0.268	0.166	0.000	0.000	M544FN01~	0.268	0.166	263.6	85.0	
VFD7	1.725	100.000	0.0	0.289	0.179	0.000	0.000	EP FAN RM 1~	0.289	0.179	113.8	85.0	
VFD8	1.725	100.000	0.0	0.289	0.179	0.000	0.000	EP FAN RM 2~	0.289	0.179	113.8	85.0	
VFD9	0.400	100.000	0.0	0.197	0.122	0.000	0.000	RAW MILL C M532FN11~	0.197	0.122	335.0	85.0	
VFD10	6.300	100.000	0.0	1.274	0.510	0.000	0.000	M552FN15~	1.274	0.510	125.7	92.9	
VFD11	0.690	100.000	0.0	0.180	0.111	0.000	0.000	M552SR01~	0.180	0.111	177.0	85.0	
VFD13	6.000	100.000	0.0	1.274	0.790	0.000	0.000	M553FN15~	1.274	0.790	144.2	85.0	
VFD14	0.690	100.000	0.0	0.180	0.111	0.000	0.000	M553SR01~	0.180	0.111	177.0	85.0	
VFD15	1.725	100.000	0.0	0.965	0.598	0.000	0.000	ID FAN 1 PREHEATER~	0.965	0.598	380.0	85.0	
VFD16	1.725	100.000	0.0	0.965	0.598	0.000	0.000	ID FAN 2 PREHEATER~	0.965	0.598	380.0	85.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

# Indicates a bus with a load mismatch of more than 0.1 MVA

Lampiran 3 Hasil Load Flow Konfigurasi 2

Project:	ETAP	Page:	1
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLN 100%

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
524RE	0.400	98.210	-4.4	0.000	0.000	0.169	0.127	B.TD.53.2	-0.169	-0.127	310.4	80.0	
580 OB 01	70.000	99.012	-0.7	0.000	0.000	0.000	0.000	CON L1	-5.571	1.247	47.6	-97.6	
								CON L2	-5.576	1.235	47.6	-97.6	
								BT1.1	11.082	-1.884	93.6	-98.6	
								BT2.1	16.903	3.947	144.6	97.4	
								580 OB 02	-16.839	-4.546	145.3	96.5	
580 OB 02	70.000	99.012	-0.7	0.000	0.000	0.000	0.000	Bus489	-31.292	-8.427	270.0	96.6	
								BT3.1	14.454	3.881	124.7	96.6	
								580 OB 01	16.839	4.546	145.3	96.5	
581SS51MB01	6.300	102.636	-2.9	0.000	0.000	0.000	0.000	Bus14	6.238	3.817	653.0	85.3	
								B.51HF01	0.034	-3.287	293.5	-1.0	
								B.51HF02	0.026	-3.184	284.3	-0.8	
								B.51HF03	0.026	-3.177	283.7	-0.8	
								BT1.2	-11.062	2.317	1009.2	-97.9	
								SB.SS51.1	4.738	3.513	526.7	80.3	
581SS52MB01	6.300	100.592	-4.1	0.000	0.000	0.000	0.000	B.52HF01	0.025	-3.051	278.0	-0.8	
								B.52HF02	0.025	-3.051	278.0	-0.8	
								B.52HF03	0.033	-3.157	287.6	-1.0	
								582ER55AMB01	9.245	6.599	1034.8	81.4	
								582ER56MB01	2.815	1.920	310.4	82.6	
								582ER57MB01	3.687	2.842	424.1	79.2	
								Bus19	1.028	0.808	119.1	78.6	
								583MB01	0.000	0.000	0.0	0.0	
								BT2.2	-16.857	-2.909	1558.5	98.5	
581SS53MB01	6.300	100.610	-3.6	0.000	0.000	0.000	0.000	B.53HF01	0.032	-3.157	287.5	-1.0	
								B.53HF02	0.024	-3.051	277.9	-0.8	
								BT3.2	-14.420	-3.110	1343.7	97.8	
								SB.SS53.1	8.783	5.716	954.5	83.8	
								SB.SS53.2	5.581	3.602	605.0	84.0	
582ER51LV01	0.400	99.517	-4.4	0.000	0.000	0.942	0.706	B.TD.51.1	-0.942	-0.706	1707.0	80.0	
582ER51MB01	6.300	101.909	-3.0	0.000	0.000	0.000	0.000	B.TD.51.1	0.947	0.745	108.4	78.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								B.LSCR1	0.640	0.396	67.7	85.0	
								B.LSCR2	0.640	0.396	67.7	85.0	
								582ER52AMB01	-2.227	-1.537	243.4	82.3	
582ER52ALV01	0.400	99.011	-4.8	0.000	0.000	1.206	0.905	B.TD.52.1	-1.206	-0.905	2198.0	80.0	
582ER52AMB01	6.300	101.961	-3.0	0.000	0.000	0.000	0.000	582ER53MB01	1.273	1.000	145.5	78.6	
								B.TD.52.1	1.213	0.969	139.5	78.1	
								582ER51MB01	2.228	1.534	243.2	82.4	
								SB.SS51.1	-4.714	-3.504	527.9	80.3	
582ER53LV01	0.400	99.106	-4.6	0.000	0.000	1.092	0.819	B.TD.53.1	-1.092	-0.819	1988.5	80.0	
582ER53MB01	6.300	101.897	-3.0	0.000	0.000	0.000	0.000	582ER52AMB01	-1.272	-1.007	145.9	78.4	
								B.TD.53.1	1.100	0.872	126.2	78.4	
								B.TD.53.2	0.172	0.135	19.7	78.8	
582ER54ALV01	0.400	97.767	-5.1	0.000	0.000	0.975	0.732	B.TD.54.1	-0.975	-0.732	1800.2	80.0	
582ER54BLV01	0.400	98.319	-4.8	0.000	0.000	0.608	0.456	B.TD.54.2	-0.608	-0.456	1116.6	80.0	
582ER54MB01	6.300	100.176	-3.7	0.000	0.000	0.000	0.000	B.FF.532FN11	0.134	0.083	14.5	85.1	
								B.TR.RMCT.	0.220	0.127	23.2	86.6	
								B.RMDF	3.944	2.449	424.7	85.0	
								B.RMMD	2.866	1.775	308.4	85.0	
								B.TD.54.1	0.980	0.775	114.3	78.4	
								B.TD.54.2	0.611	0.477	70.9	78.8	
								SB.SS53.1	-8.755	-5.686	955.0	83.9	
582ER55ALV01	0.400	96.079	-6.5	0.000	0.000	1.527	1.145	B.TD.55A.1	-1.527	-1.145	2866.9	80.0	
582ER55ALV02	0.400	97.406	-5.7	0.000	0.000	1.023	0.767	B.TD.55A.2	-1.023	-0.767	1895.2	80.0	
582ER55AMB01	6.300	99.962	-4.2	0.000	0.000	0.000	0.000	B.TR-EP	1.438	1.133	167.8	78.6	
								B.TR.FPF	1.039	0.618	110.8	86.0	
								B.TR.IDF2	1.279	0.803	138.4	84.7	
								B.TR.IDF1	1.279	0.803	138.5	84.7	
								B.TR.KLN.DRV	0.857	0.545	93.1	84.4	
								B.TD.55A.2	1.028	0.815	120.3	78.3	
								B.TD.55A.1	1.538	1.255	182.0	77.5	
								B.TD.55B.1	0.742	0.585	86.6	78.5	
								581SS52MB01	-9.200	-6.557	1035.8	81.4	
582ER56LV01	0.400	97.471	-5.7	0.000	0.000	1.106	0.829	B.TD.56.1	-1.106	-0.829	2046.9	80.0	

Project:	ETAP	Page:	3
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
582ER56MB01	6.300	100.364	-4.1	0.000	0.000	0.000	0.000	B.TR.BFCM	0.151	0.087	15.9	86.7	
								B.TD.56.1	1.114	0.885	129.9	78.3	
								B.CMF	0.979	0.606	105.1	85.0	
								B.CMT	0.566	0.350	60.8	85.1	
								581SS52MB01	-2.810	-1.928	311.2	82.5	
582ER57LV01	0.400	96.845	-6.2	0.000	0.000	1.351	1.013	B.TD.57.1	-1.351	-1.013	2517.2	80.0	
582ER57LV02	0.400	100.212	-4.1	0.000	0.000	0.002	0.001	B.TD.57.2	-0.002	-0.001	3.2	80.0	
582ER57LV03	0.690	97.389	-5.9	0.000	0.000	0.977	0.732	B.VFD7	-0.977	-0.732	1048.9	80.0	
582ER57LV04	0.690	97.544	-5.8	0.000	0.000	0.824	0.618	B.VFD8	-0.824	-0.618	883.0	80.0	
582ER57MB01	6.300	100.217	-4.1	0.000	0.000	0.000	0.000	B.TD.57.2	0.002	0.001	0.2	82.9	
								B.TD.57.1	1.359	1.098	159.8	77.8	
								B.TR.EPFC	0.207	0.123	22.0	86.1	
								B.TR.BFC	0.300	0.176	31.8	86.2	
								B.TR.GC	1.808	1.444	211.6	78.2	
								581SS52MB01	-3.677	-2.842	424.9	79.1	
582ER58A	6.300	102.216	-3.0	0.000	0.000	0.000	0.000	B.TD.58A.2	0.657	0.513	74.8	78.8	
								B.TD.58A.1	1.032	0.826	118.5	78.1	
								B.C.MILL.T1	2.908	1.802	306.7	85.0	
								B.FF.C.MILL.1	1.421	0.561	137.0	93.0	
								B.FMCL1	0.201	0.117	20.9	86.4	
								Bus14	-6.219	-3.819	654.3	85.2	
582ER58ALV01	0.400	98.935	-4.8	0.000	0.000	1.024	0.768	B.TD.58A.1	-1.024	-0.768	1866.6	80.0	
582ER58ALV02	0.400	100.158	-4.1	0.000	0.000	0.654	0.490	B.TD.58A.2	-0.654	-0.490	1177.7	80.0	
582ER58B	6.300	100.335	-3.6	0.000	0.000	0.000	0.000	B.TD.58B.1	1.038	0.821	120.9	78.4	
								B.C.MILL.T2	2.908	1.802	312.5	85.0	
								B.FF.C.MILL.2	1.422	0.853	151.5	85.7	
								B.FMCL2	0.202	0.119	21.4	86.2	
								SB.SS53.2	-5.569	-3.595	605.5	84.0	
582ER58BLV01	0.400	97.671	-5.1	0.000	0.000	1.031	0.773	B.TD.58B.1	-1.031	-0.773	1903.7	80.0	
582ER59	6.300	100.264	-4.0	0.000	0.000	0.000	0.000	B.TD.59.1	1.025	0.822	120.0	78.0	
								Bus19	-1.025	-0.822	120.0	78.0	
582ER59LV01	0.400	96.956	-5.9	0.000	0.000	1.016	0.762	B.TD.59.1	-1.016	-0.762	1890.8	80.0	
583MB01	6.300	100.592	-4.1	0.000	0.000	0.000	0.000	B.1D1	0.000	0.000	0.0	0.0	

Project:		ETAP		Page:	4
Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:			Study Case: LF	Revision:	Base
Filename:	Sistem Tonasa 2022			Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								581SS52MB01	0.000	0.000	0.0	0.0	
B.51HF01	6.300	102.694	-2.9	0.000	0.000	0.033	-3.288	581SS51MB01	-0.033	3.288	293.4	-1.0	
B.51HF02	6.300	102.692	-2.9	0.000	0.000	0.025	-3.185	581SS51MB01	-0.025	3.185	284.3	-0.8	
B.51HF03	6.300	102.692	-2.9	0.000	0.000	0.025	-3.178	581SS51MB01	-0.025	3.178	283.6	-0.8	
B.52HF01	6.300	100.640	-4.1	0.000	0.000	0.024	-3.052	581SS52MB01	-0.024	3.052	277.9	-0.8	
B.52HF02	6.300	100.640	-4.1	0.000	0.000	0.024	-3.052	581SS52MB01	-0.024	3.052	277.9	-0.8	
B.52HF03	6.300	100.641	-4.1	0.000	0.000	0.031	-3.158	581SS52MB01	-0.031	3.158	287.6	-1.0	
B.53HF01	6.300	100.626	-3.6	0.000	0.000	0.031	-3.157	581SS53MB01	-0.031	3.157	287.5	-1.0	
B.53HF02	6.300	100.626	-3.6	0.000	0.000	0.024	-3.051	581SS53MB01	-0.024	3.051	277.9	-0.8	
B.C.MILL.T1	6.300	102.167	-3.0	0.000	0.000	2.906	1.801	582ER58A	-2.906	-1.801	306.7	85.0	
B.C.MILL.T2	6.300	100.266	-3.6	0.000	0.000	2.906	1.801	582ER58B	-2.906	-1.801	312.5	85.0	
B.CMF	6.300	100.272	-4.1	0.000	0.000	0.978	0.606	582ER56MB01	-0.978	-0.606	105.2	85.0	
B.CMT	6.300	100.231	-4.1	0.000	0.000	0.565	0.350	582ER56MB01	-0.565	-0.350	60.8	85.0	
B.FF.532FN11	6.300	100.120	-3.7	0.000	0.000	0.134	0.083	582ER54MB01	-0.134	-0.083	14.5	85.0	
B.FF.C.MILL1	6.300	102.193	-3.0	0.000	0.000	0.000	0.000	582ER58A	-1.420	-0.561	137.0	93.0	
								B.VFD10	1.420	0.561	137.0	93.0	
B.FF.C.MILL2	6.300	100.305	-3.6	0.000	0.000	0.000	0.000	582ER58B	-1.422	-0.853	151.5	85.7	
								B.VFD13	1.422	0.853	151.5	85.7	
B.FMCL1	6.300	102.207	-3.0	0.000	0.000	0.000	0.000	582ER58A	-0.201	-0.117	20.9	86.4	
								B.VFD11	0.201	0.117	20.9	86.4	
B.FMCL2	6.300	100.326	-3.6	0.000	0.000	0.000	0.000	582ER58B	-0.202	-0.119	21.4	86.2	
								B.VFD14	0.202	0.119	21.4	86.2	
B.INT1	6.300	102.636	-2.9	0.000	0.000	0.000	0.000	SB.SS51.1	0.000	0.000	0.0	0.0	
B.INT2	6.300	102.510	-2.9	0.000	0.000	0.000	0.000	Bus14	0.000	0.000	0.0	0.0	
B.I.SCR1	6.300	101.839	-3.0	0.000	0.000	0.639	0.396	582ER51MB01	-0.639	-0.396	67.7	85.0	
B.I.SCR2	6.300	101.825	-3.0	0.000	0.000	0.639	0.396	582ER51MB01	-0.639	-0.396	67.7	85.0	
B.PLN	70.000	99.012	-0.7	0.000	0.000	0.000	0.000	Bus489	31.292	8.427	270.0	96.6	
								Bus103	-31.292	-8.427	270.0	96.6	
B.RMIDF	6.300	99.853	-3.7	0.000	0.000	3.934	2.438	582ER54MB01	-3.934	-2.438	424.7	85.0	
B.RMMD	6.300	100.095	-3.7	0.000	0.000	2.864	1.775	582ER54MB01	-2.864	-1.775	308.5	85.0	
B.TD1	6.300	100.592	-4.1	0.000	0.000	0.000	0.000	583MB01	0.000	0.000	0.0	0.0	
B.TD.51.1	6.300	101.881	-3.0	0.000	0.000	0.000	0.000	582ER51MB01	-0.947	-0.745	108.4	78.6	
								582ER51LV01	0.947	0.745	108.4	78.6	

Project:	ETAP	Page:	5
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
B.TD.52.1	6.300	101.926	-3.0	0.000	0.000	0.000	0.000	582ER52AMB01	-1.212	-0.969	139.6	78.1	
								582ER52ALV01	1.212	0.969	139.6	78.1	
B.TD.53.1	6.300	101.865	-3.0	0.000	0.000	0.000	0.000	582ER53MB01	-1.100	-0.872	126.3	78.4	
								582ER53LV01	1.100	0.872	126.3	78.4	
B.TD.53.2	6.300	101.756	-3.0	0.000	0.000	0.000	0.000	582ER53MB01	-0.172	-0.136	19.7	78.5	
								524RF	0.172	0.136	19.7	78.5	
B.TD.54.1	6.300	100.147	-3.7	0.000	0.000	0.000	0.000	582ER54MB01	-0.980	-0.775	114.3	78.4	
								582ER54ALV01	0.980	0.775	114.3	78.4	
B.TD.54.2	6.300	100.158	-3.7	0.000	0.000	0.000	0.000	582ER54MB01	-0.610	-0.477	70.9	78.8	
								582ER54BLV01	0.610	0.477	70.9	78.8	
B.TD.55A.1	6.300	99.902	-4.2	0.000	0.000	0.000	0.000	582ER55AMB01	-1.537	-1.255	182.0	77.5	
								582ER55ALV01	1.537	1.255	182.0	77.5	
B.TD.55A.2	6.300	99.914	-4.2	0.000	0.000	0.000	0.000	582ER55AMB01	-1.028	-0.815	120.3	78.3	
								582ER55ALV02	1.028	0.815	120.3	78.3	
B.TD.55B.1	6.300	99.887	-4.2	0.000	0.000	0.000	0.000	582ER55AMB01	-0.742	-0.585	86.7	78.5	
								Bus22	0.742	0.585	86.7	78.5	
B.TD.56.1	6.300	100.312	-4.1	0.000	0.000	0.000	0.000	582ER56MB01	-1.114	-0.885	130.0	78.3	
								582ER56LV01	1.114	0.885	130.0	78.3	
B.TD.57.1	6.300	100.192	-4.1	0.000	0.000	0.000	0.000	582ER57MB01	-1.359	-1.098	159.8	77.8	
								582ER57LV01	1.359	1.098	159.8	77.8	
B.TD.57.2	6.300	100.217	-4.1	0.000	0.000	0.000	0.000	582ER57MB01	-0.002	-0.001	0.2	80.0	
								582ER57LV02	0.002	0.001	0.2	80.0	
B.TD.58A.1	6.300	102.180	-3.0	0.000	0.000	0.000	0.000	582ER58A	-1.032	-0.826	118.5	78.1	
								582ER58ALV01	1.032	0.826	118.5	78.1	
B.TD.58A.2	6.300	102.193	-3.0	0.000	0.000	0.000	0.000	582ER58A	-0.657	-0.513	74.8	78.8	
								582ER58ALV02	0.657	0.513	74.8	78.8	
B.TD.58B.1	6.300	100.311	-3.6	0.000	0.000	0.000	0.000	582ER58B	-1.037	-0.821	120.9	78.4	
								582ER58BLV01	1.037	0.821	120.9	78.4	
B.TD.59.1	6.300	100.245	-4.0	0.000	0.000	0.000	0.000	582ER59	-1.024	-0.822	120.0	78.0	
								582ER59LV01	1.024	0.822	120.0	78.0	
B.TR-EP	6.300	99.834	-4.2	0.000	0.000	0.000	0.000	582ER55AMB01	-1.436	-1.132	167.8	78.5	
								Bus5	1.436	1.132	167.8	78.5	
								&Bus6					

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
B.TR.BFC	6.300	100.198	-4.1	0.000	0.000	0.000	0.000	582ER57MB01	-0.300	-0.176	31.8	86.2	
								B.VFD6	0.300	0.176	31.8	86.2	
B.TR.BFCM	6.300	100.274	-4.1	0.000	0.000	0.000	0.000	582ER56MB01	-0.151	-0.087	15.9	86.5	
								B.VFD4	0.151	0.087	15.9	86.5	
B.TR.EPF	6.300	99.877	-4.2	0.000	0.000	0.000	0.000	582ER55AMB01	-1.038	-0.618	110.8	85.9	
								B.VFD1	1.038	0.618	110.8	85.9	
B.TR.EPFC	6.300	100.205	-4.1	0.000	0.000	0.000	0.000	582ER57MB01	-0.207	-0.123	22.0	86.1	
								B.VFD5	0.207	0.123	22.0	86.1	
B.TR.GC	6.300	100.196	-4.1	0.000	0.000	0.000	0.000	582ER57MB01	-1.808	-1.443	211.6	78.2	
								B.VFD7	1.808	1.443	211.6	78.2	
								&B.VFD8					
B.TR.IDF1	6.300	99.856	-4.2	0.000	0.000	0.000	0.000	582ER55AMB01	-1.278	-0.803	138.5	84.7	
								B.VFD3	1.278	0.803	138.5	84.7	
B.TR.IDF2	6.300	99.871	-4.2	0.000	0.000	0.000	0.000	582ER55AMB01	-1.278	-0.803	138.5	84.7	
								B.VFD2	1.278	0.803	138.5	84.7	
B.TR.KI.N.DRV	6.300	99.925	-4.2	0.000	0.000	0.000	0.000	582ER55AMB01	-0.857	-0.546	93.2	84.4	
								Bus1	0.857	0.546	93.2	84.4	
								&Bus2					
B.TR.RMCL	6.300	100.163	-3.7	0.000	0.000	0.000	0.000	582ER54MB01	-0.220	-0.127	23.2	86.6	
								B.VFD9	0.220	0.127	23.2	86.6	
B.VFD1	0.400	97.920	-5.8	0.000	0.000	1.034	0.577	B.TR.EPF	-1.034	-0.577	1745.3	87.3	
								VFD1	1.034	0.577	1745.3	87.3	
B.VFD2	6.300	96.166	-7.2	0.000	0.000	1.269	0.708	B.TR.IDF2	-1.269	-0.708	138.5	87.3	
								VFD2	1.269	0.708	138.5	87.3	
B.VFD3	6.300	96.151	-7.2	0.000	0.000	1.269	0.708	B.TR.IDF1	-1.269	-0.708	138.5	87.3	
								VFD3	1.269	0.708	138.5	87.3	
B.VFD4	0.400	98.480	-5.1	0.000	0.000	0.149	0.083	B.TR.BFCM	-0.149	-0.083	250.6	87.3	
								VFD4	0.149	0.083	250.6	87.3	
B.VFD5	0.690	97.957	-5.6	0.000	0.000	0.206	0.115	B.TR.EPFC	-0.206	-0.115	201.2	87.3	
								VFD5	0.206	0.115	201.2	87.3	
B.VFD6	0.690	98.173	-5.4	0.000	0.000	0.298	0.166	B.TR.BFC	-0.298	-0.166	290.3	87.3	
								VFD6	0.298	0.166	290.3	87.3	
B.VFD7	0.690	97.389	-5.9	0.000	0.000	0.000	0.000	582ER57LV03	0.977	0.732	1048.9	80.0	

Project:		ETAP		Page:	7
Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:				Revision:	Base
Filename:	Sistem Tonasa 2022		Study Case: LF	Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								B.VFD8	-0.977	-0.732	1048.9	80.0	
								&B.TR.GC					
B.VFD8	0.690	97.544	-5.8	0.000	0.000	0.000	0.000	582ER57LV04	0.824	0.618	883.0	80.0	
								B.TR.GC	-0.824	-0.618	883.0	80.0	
								&B.VFD7					
B.VFD9	0.400	98.978	-4.5	0.000	0.000	0.219	0.122	B.TR.RMCT.	-0.219	-0.122	366.0	87.3	
								VFD9	0.219	0.122	366.0	87.3	
B.VFD10	6.300	100.662	-4.8	0.000	0.000	1.416	0.510	B.FF.C.MILL1	-1.416	-0.510	137.0	94.1	
								VFD10	1.416	0.510	137.0	94.1	
B.VFD11	0.690	100.364	-4.1	0.000	0.000	0.200	0.111	B.FMCL1	-0.200	-0.111	190.7	87.3	
								VFD11	0.200	0.111	190.7	87.3	
B.VFD13	6.000	98.070	-5.5	0.000	0.000	1.416	0.790	B.FF.C.MILL2	-1.416	-0.790	159.0	87.3	
								VFD13	1.416	0.790	159.0	87.3	
B.VFD14	0.690	98.057	-5.0	0.000	0.000	0.200	0.111	B.FMCL2	-0.200	-0.111	195.2	87.3	
								VFD14	0.200	0.111	195.2	87.3	
BT1.1	70.000	99.012	-0.7	0.000	0.000	0.000	0.000	BT1.2	11.082	-1.884	93.6	-98.6	
								580 OB 01	-11.082	1.884	93.6	-98.6	
BT1.2	6.300	102.652	-2.9	0.000	0.000	0.000	0.000	581SS51MB01	11.065	-2.318	1009.2	-97.9	
								BT1.1	-11.065	2.318	1009.2	-97.9	
BT2.1	70.000	99.012	-0.7	0.000	0.000	0.000	0.000	BT2.2	16.903	3.947	144.6	97.4	
								580 OB 01	-16.903	-3.947	144.6	97.4	
BT2.2	6.300	100.621	-4.1	0.000	0.000	0.000	0.000	581SS52MB01	16.861	2.912	1558.4	98.5	
								BT2.1	-16.861	-2.912	1558.4	98.5	
BT3.1	70.000	99.012	-0.7	0.000	0.000	0.000	0.000	BT3.2	14.454	3.881	124.7	96.6	
								580 OB 02	-14.454	-3.881	124.7	96.6	
BT3.2	6.300	100.633	-3.6	0.000	0.000	0.000	0.000	581SS53MB01	14.422	3.111	1343.6	97.8	
								BT3.1	-14.422	-3.111	1343.6	97.8	
* BTGE.G01.BB6KV.01	6.300	102.000	0.0	0.000	0.000	0.000	0.000	BTGE.G01.KBL6KV.01~	0.000	-0.001	0.1	0.0	
* BTGE.G02.BB6KV.01	6.300	102.000	0.0	0.000	0.000	0.000	0.000	BTGE.G02.KBL6KV.01~	0.000	-0.001	0.1	0.0	
* BTGN.G01.BB11KV.01	11.000	102.000	0.0	0.000	-0.002	0.000	0.000	BTGN.G01.KBL11KV.01~	0.000	-0.002	0.1	0.0	
* BTGN.G02.BB11KV.01	11.000	102.000	0.0	0.000	-0.002	0.000	0.000	BTGN.G02.KBL11KV.01~	0.000	-0.002	0.1	0.0	
Bus1	0.725	98.890	-4.9	0.000	0.000	0.427	0.265	Bus2	-0.427	-0.265	404.8	85.0	
								&B.TR.KLN.DRV					

Project:	ETAP	Page:	8
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus2	0.725	98.890	-4.9	0.000	0.000	0.427	0.265	B.TR.KLN.DRV &Bus1	-0.427	-0.265	404.8	85.0	
Bus2- 1100	70.000	99.302	-0.4	0.000	0.000	0.000	0.000	Bus105	-38.412	-15.000	342.5	93.1	
								Bus26	-38.412	-15.000	342.5	93.1	
								Bus360 - 830	76.825	29.999	685.0	93.1	
Bus4	6.300	97.992	-3.6	0.000	0.000	0.000	0.000	SG4	-0.969	-0.637	108.4	83.5	
								Bus236	0.969	0.637	108.4	83.5	
Bus5	0.400	97.676	-5.6	0.000	0.000	0.716	0.537	Bus6 &B.TR-EP	-0.716	-0.537	1321.7	80.0	
Bus6	0.400	97.676	-5.6	0.000	0.000	0.716	0.537	B.TR-EP &Bus5	-0.716	-0.537	1321.7	80.0	
Bus7	6.300	97.992	-3.6	0.000	0.000	0.000	0.000	SG4	-0.969	-0.637	108.4	83.5	
								Bus238	0.969	0.637	108.4	83.5	
Bus9	6.300	97.990	-3.6	0.000	0.000	0.000	0.000	SG4	-0.305	-0.229	35.7	79.9	
								Bus248	0.305	0.229	35.7	79.9	
Bus10	6.300	98.040	-3.6	0.000	0.000	0.000	0.000	SG4	-0.374	-0.232	41.1	85.0	
								Bus252	0.374	0.232	41.1	85.0	
Bus11	6.300	98.038	-3.6	0.000	0.000	0.000	0.000	SG4	-0.387	-0.240	42.6	85.0	
								Bus253	0.387	0.240	42.6	85.0	
Bus12	6.300	98.071	-3.6	0.000	0.000	0.000	0.000	SG4	-1.406	-0.871	154.6	85.0	
								Bus507	1.406	0.871	154.6	85.0	
Bus13	6.300	98.071	-3.6	0.000	0.000	0.000	0.000	SG4	-1.406	-0.871	154.6	85.0	
								Bus508	1.406	0.871	154.6	85.0	
Bus14	6.300	102.510	-2.9	0.000	0.000	0.000	0.000	B.IN12	0.000	-0.001	0.1	0.0	
								581SS51MB01	-6.232	-3.828	653.9	85.2	
								582ER58A	6.232	3.830	653.9	85.2	
Bus15	70.000	99.021	-0.6	0.000	0.000	0.000	0.000	GANTRY 2	6.060	-1.288	51.6	-97.8	
								Bus209	-6.060	1.288	51.6	-97.8	
Bus16	6.300	98.079	-3.6	0.000	0.000	0.000	0.000	SG4	-0.480	-0.359	56.0	80.1	
								Bus512	0.480	0.359	56.0	80.1	
Bus17	6.300	98.021	-3.6	0.000	0.000	0.000	0.000	SG4	-0.480	-0.359	56.0	80.1	
								Bus515	0.480	0.359	56.0	80.1	
Bus18	70.000	99.021	-0.6	0.000	0.000	0.000	0.000	GANTRY 1	6.063	-1.282	51.6	-97.8	

Project:	ETAP	Page:	9
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Bus217	-6.063	1.282	51.6	-97.8	
Bus19	6.300	100.486	-4.1	0.000	0.000	0.000	0.000	581SS52MB01	-1.028	-0.822	120.0	78.1	
								582ER59	1.028	0.822	120.0	78.1	
								SS53MV08->B.582ER59~	0.000	0.000	0.0	0.0	
Bus22	0.400	97.632	-5.6	0.000	0.000	0.739	0.554	B.TD.55B.1	-0.739	-0.554	1365.0	80.0	
Bus24	70.000	99.302	-0.4	0.000	0.000	0.000	0.000	Bus103	31.345	8.564	269.9	96.5	
								Bus360 - 830	-31.345	-8.564	269.9	96.5	
Bus26	70.000	99.302	-0.4	0.000	0.000	0.000	0.000	GI.PLN	-38.412	-15.000	342.5	93.1	
								Bus2- 1100	38.412	15.000	342.5	93.1	
Bus31	0.400	96.923	-3.5	0.000	0.000	0.451	0.338	Bus32	-0.451	-0.338	839.4	80.0	
Bus32	0.400	101.536	-4.4	0.000	0.000	0.000	0.000	Bus31	0.478	0.347	839.4	80.9	
								Bus33	-0.478	-0.347	839.4	80.9	
Bus33	6.300	97.960	-3.6	0.000	0.000	0.000	0.000	Bus32	0.479	0.358	56.0	80.1	
								Bus34	-0.479	-0.358	56.0	80.1	
Bus34	6.300	97.960	-3.6	0.000	0.000	0.000	0.000	ESG1	-0.479	-0.358	56.0	80.1	
								Bus33	0.479	0.358	56.0	80.1	
Bus35	6.000	102.922	-3.6	0.000	0.000	0.000	0.000	ESG1	0.000	0.000	0.0	0.0	
Bus42	0.400	96.943	-3.2	0.000	0.000	0.451	0.338	Bus43	-0.451	-0.338	839.6	80.0	
Bus43	0.400	101.557	-4.1	0.000	0.000	0.000	0.000	Bus42	0.478	0.347	839.6	80.9	
								Bus44	-0.478	-0.347	839.6	80.9	
Bus44	6.300	97.559	-3.6	0.000	0.000	0.000	0.000	Bus43	0.479	0.355	56.0	80.4	
								Bus45	-0.479	-0.355	56.0	80.4	
Bus45	6.300	97.559	-3.6	0.000	0.000	0.000	0.000	SG4A	-0.479	-0.355	56.0	80.4	
								Bus44	0.479	0.355	56.0	80.4	
Bus50	0.400	96.943	-3.2	0.000	0.000	0.451	0.338	Bus51	-0.451	-0.338	839.6	80.0	
Bus51	0.400	101.557	-4.1	0.000	0.000	0.000	0.000	Bus50	0.478	0.347	839.6	80.9	
								Bus52	-0.478	-0.347	839.6	80.9	
Bus52	6.300	97.559	-3.6	0.000	0.000	0.000	0.000	Bus51	0.479	0.355	56.0	80.4	
								Bus53	-0.479	-0.355	56.0	80.4	
Bus53	6.300	97.559	-3.6	0.000	0.000	0.000	0.000	SG4A	-0.479	-0.355	56.0	80.4	
								Bus52	0.479	0.355	56.0	80.4	
Bus56	6.300	97.608	-3.6	0.000	0.000	1.406	0.871	Bus57	-1.406	-0.871	155.3	85.0	
Bus57	6.300	97.608	-3.6	0.000	0.000	0.000	0.000	SG4A	-1.406	-0.871	155.3	85.0	

Project:		ETAP		Page:	10
Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:		Study Case: LF		Revision:	Base
Filename:	Sistem Tonasa 2022			Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Bus56	1.406	0.871	155.3	85.0	
Bus58	6.300	97.608	-3.6	0.000	0.000	1.406	0.871	Bus59	-1.406	-0.871	155.3	85.0	
Bus59	6.300	97.608	-3.6	0.000	0.000	0.000	0.000	SG4A	-1.406	-0.871	155.3	85.0	
								Bus58	1.406	0.871	155.3	85.0	
Bus95	70.000	99.302	-0.4	0.000	0.000	0.000	0.000	Bus101	45.479	21.435	417.6	90.5	
								Bus353	-45.479	-21.435	417.6	90.5	
Bus96	70.000	99.021	-0.6	0.000	0.000	0.000	0.000	Bus273	9.174	6.349	92.9	82.2	
								Bus312	36.242	14.903	326.4	92.5	
								Bus101	-45.416	-21.251	417.6	90.6	
Bus97	70.000	99.021	-0.6	0.000	0.000	0.000	0.000	Bus168	10.131	7.152	103.3	81.7	
								Bus209	-10.131	-7.152	103.3	81.7	
Bus101	70.000	99.021	-0.6	0.000	0.000	0.000	0.000	Bus95	-45.416	-21.251	417.6	90.6	
								Bus96	45.416	21.251	417.6	90.6	
Bus103	70.000	99.012	-0.7	0.000	0.000	0.000	0.000	Bus24	-31.292	-8.427	270.0	96.6	
								B.PI.N	31.292	8.427	270.0	96.6	
Bus105	70.000	99.302	-0.4	0.000	0.000	0.000	0.000	GI PI.N	-38.412	-15.000	342.5	93.1	
								Bus2- 1100	38.412	15.000	342.5	93.1	
Bus168	6.300	99.347	-2.7	0.000	0.000	0.000	0.000	SG1	10.110	6.590	1113.2	83.8	
								Bus97	-10.110	-6.590	1113.2	83.8	
Bus171	6.300	99.237	-2.8	0.000	0.000	0.000	0.000	Bus188	0.492	0.367	56.6	80.2	
								Bus191	0.492	0.367	56.7	80.1	
								SG2	-0.983	-0.734	113.3	80.1	
Bus172	6.300	99.011	-2.8	0.000	0.000	0.957	0.593	SG2	-0.957	-0.593	104.2	85.0	
Bus174	6.300	99.182	-2.8	0.000	0.000	1.408	0.873	SG2	-1.408	-0.873	153.1	85.0	
Bus175	6.300	99.169	-2.8	0.000	0.000	1.738	1.077	SG2	-1.738	-1.077	189.0	85.0	
Bus176	6.300	99.129	-2.8	0.000	0.000	0.000	0.000	SG2	-0.312	-0.235	36.1	79.9	
								Bus177	0.312	0.235	36.1	79.9	
Bus177	0.400	102.926	-3.4	0.000	0.000	0.000	0.000	Bus178	0.311	0.229	541.0	80.6	
								Bus176	-0.311	-0.229	541.0	80.6	
Bus178	0.400	99.955	-2.9	0.000	0.000	0.300	0.225	Bus177	-0.300	-0.225	541.0	80.0	
Bus182	6.300	99.185	-2.8	0.000	0.000	0.000	0.000	SG2	-0.251	-0.189	29.1	79.9	
								Bus183	0.251	0.189	29.1	79.9	
Bus183	0.400	103.049	-3.3	0.000	0.000	0.000	0.000	Bus184	0.250	0.185	435.9	80.5	

Project:	ETAP	Page:	11
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Bus182	-0.250	-0.185	435.9	80.5	
Bus184	0.400	100.656	-2.9	0.000	0.000	0.243	0.182	Bus183	-0.243	-0.182	435.9	80.0	
Bus185	6.300	99.195	-2.8	0.000	0.000	0.000	0.000	SG2	-0.202	-0.152	23.4	79.8	
								Bus186	0.202	0.152	23.4	79.8	
Bus186	0.400	103.162	-3.3	0.000	0.000	0.000	0.000	Bus187	0.201	0.149	350.7	80.4	
								Bus185	-0.201	-0.149	350.7	80.4	
Bus187	0.400	101.238	-2.9	0.000	0.000	0.197	0.148	Bus186	-0.197	-0.148	350.7	80.0	
Bus188	6.300	99.213	-2.8	0.000	0.000	0.000	0.000	Bus171	-0.491	-0.367	56.7	80.1	
								Bus189	0.491	0.367	56.7	80.1	
Bus189	0.400	102.834	-3.5	0.000	0.000	0.000	0.000	Bus190	0.490	0.356	850.1	80.9	
								Bus188	-0.490	-0.356	850.1	80.9	
Bus190	0.400	98.162	-2.7	0.000	0.000	0.463	0.347	Bus189	-0.463	-0.347	850.1	80.0	
Bus191	6.300	99.218	-2.8	0.000	0.000	0.000	0.000	Bus171	-0.492	-0.367	56.7	80.1	
								Bus192	0.492	0.367	56.7	80.1	
Bus192	0.400	102.840	-3.5	0.000	0.000	0.000	0.000	Bus193	0.490	0.356	850.2	80.9	
								Bus191	-0.490	-0.356	850.2	80.9	
Bus193	0.400	98.167	-2.7	0.000	0.000	0.463	0.347	Bus192	-0.463	-0.347	850.2	80.0	
Bus196	6.300	99.182	-2.8	0.000	0.000	1.406	0.871	SG3	-1.406	-0.871	152.8	85.0	
Bus198	6.300	99.169	-2.8	0.000	0.000	1.738	1.077	SG3	-1.738	-1.077	189.0	85.0	
Bus202	6.300	99.192	-2.8	0.000	0.000	0.000	0.000	SG3	-0.491	-0.367	56.7	80.1	
								Bus203	0.491	0.367	56.7	80.1	
Bus203	0.400	102.813	-3.5	0.000	0.000	0.000	0.000	Bus204	0.490	0.356	849.9	80.9	
								Bus202	-0.490	-0.356	849.9	80.9	
Bus204	0.400	98.141	-2.7	0.000	0.000	0.462	0.347	Bus203	-0.462	-0.347	849.9	80.0	
Bus205	6.300	99.232	-2.8	0.000	0.000	0.000	0.000	SG3	-0.609	-0.453	70.0	80.2	
								Bus206	0.609	0.453	70.0	80.2	
Bus206	0.400	102.841	-3.6	0.000	0.000	0.000	0.000	Bus207	0.607	0.438	1050.7	81.1	
								Bus205	-0.607	-0.438	1050.7	81.1	
Bus207	0.400	97.063	-2.6	0.000	0.000	0.565	0.424	Bus206	-0.565	-0.424	1050.7	80.0	
Bus209	70.000	99.021	-0.6	0.000	0.000	0.000	0.000	Bus15	6.060	-1.288	51.6	-97.8	
								Bus97	10.131	7.152	103.3	81.7	
								Bus217	-16.191	-5.864	143.4	94.0	
Bus215	6.300	98.175	-3.6	0.000	0.000	0.000	0.000	SG4	13.948	9.217	1560.6	83.4	

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Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:			Study Case: LF	Revision:	Base
Filename:	Sistem Tonasa 2022			Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Bus216	-13.948	-9.217	1560.6	83.4	
Bus216	70.000	99.021	-0.6	0.000	0.000	0.000	0.000	Bus215	13.988	10.320	144.8	80.5	
								Bus217	-13.988	-10.320	144.8	80.5	
Bus217	70.000	99.021	-0.6	0.000	0.000	0.000	0.000	Bus18	6.063	-1.282	51.6	-97.8	
								Bus216	13.988	10.320	144.8	80.5	
								Bus209	16.191	5.864	143.4	94.0	
								Bus312	-36.242	-14.903	326.4	92.5	
Bus219	6.300	97.928	-3.6	0.000	0.000	0.000	0.000	SG4	-0.773	-0.580	90.4	80.0	
								Bus230	0.386	0.290	45.2	80.0	
								Bus233	0.386	0.290	45.2	80.0	
Bus220	6.300	98.038	-3.6	0.000	0.000	0.000	0.000	SG4	-0.290	-0.186	32.2	84.2	
								Bus221	0.290	0.186	32.2	84.2	
Bus221	1.725	96.714	-4.5	0.000	0.000	0.289	0.179	Bus220	-0.289	-0.179	117.7	85.0	
								VFD7	0.289	0.179	117.7	85.0	
Bus222	6.300	98.071	-3.6	0.000	0.000	0.000	0.000	SG4	-0.290	-0.186	32.2	84.2	
								Bus223	0.290	0.186	32.2	84.2	
Bus223	1.725	96.748	-4.5	0.000	0.000	0.289	0.179	Bus222	-0.289	-0.179	117.6	85.0	
								VFD8	0.289	0.179	117.6	85.0	
Bus224	6.300	98.046	-3.6	0.000	0.000	0.348	0.145	SG4	-0.348	-0.145	35.2	92.3	
Bus228	0.400	97.864	-3.6	0.000	0.000	0.368	0.276	Bus229	-0.368	-0.276	678.0	80.0	
Bus229	0.400	101.589	-4.3	0.000	0.000	0.000	0.000	Bus228	0.385	0.282	678.0	80.7	
								Bus230	-0.385	-0.282	678.0	80.7	
Bus230	6.300	97.928	-3.6	0.000	0.000	0.000	0.000	Bus229	0.386	0.290	45.2	80.0	
								Bus219	-0.386	-0.290	45.2	80.0	
Bus231	0.400	97.864	-3.6	0.000	0.000	0.368	0.276	Bus232	-0.368	-0.276	678.0	80.0	
Bus232	0.400	101.589	-4.3	0.000	0.000	0.000	0.000	Bus231	0.385	0.282	678.0	80.7	
								Bus233	-0.385	-0.282	678.0	80.7	
Bus233	6.300	97.928	-3.6	0.000	0.000	0.000	0.000	Bus232	0.386	0.290	45.2	80.0	
								Bus219	-0.386	-0.290	45.2	80.0	
Bus236	6.300	97.992	-3.6	0.000	0.000	0.000	0.000	Bus237	0.969	0.637	108.4	83.5	
								Bus4	-0.969	-0.637	108.4	83.5	
Bus237	1.725	95.956	-5.2	0.000	0.000	0.965	0.598	Bus236	-0.965	-0.598	396.0	85.0	
								VFD15	0.965	0.598	396.0	85.0	

Project:		ETAP		Page:	13
Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:			Study Case: LF	Revision:	Base
Filename:	Sistem Tonasa 2022			Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus238	6.300	97.992	-3.6	0.000	0.000	0.000	0.000	Bus239	0.969	0.637	108.4	83.5	
								Bus7	-0.969	-0.637	108.4	83.5	
Bus239	1.725	95.956	-5.2	0.000	0.000	0.965	0.598	Bus238	-0.965	-0.598	396.0	85.0	
								VFD16	0.965	0.598	396.0	85.0	
Bus248	6.300	97.990	-3.6	0.000	0.000	0.000	0.000	Bus249	0.305	0.229	35.7	79.9	
								Bus9	-0.305	-0.229	35.7	79.9	
Bus249	0.400	101.743	-4.2	0.000	0.000	0.000	0.000	Bus250	0.304	0.223	534.8	80.6	
								Bus248	-0.304	-0.223	534.8	80.6	
Bus250	0.400	98.807	-3.7	0.000	0.000	0.293	0.220	Bus249	-0.293	-0.220	534.8	80.0	
Bus252	6.300	98.040	-3.6	0.000	0.000	0.374	0.232	Bus10	-0.374	-0.232	41.1	85.0	
Bus253	6.300	98.038	-3.6	0.000	0.000	0.387	0.240	Bus11	-0.387	-0.240	42.6	85.0	
Bus261	0.400	95.852	-3.4	0.000	0.000	0.551	0.413	Bus262	-0.551	-0.413	1037.6	80.0	
Bus262	0.400	101.558	-4.5	0.000	0.000	0.000	0.000	Bus261	0.592	0.427	1037.6	81.1	
								Bus263	-0.592	-0.427	1037.6	81.1	
Bus263	6.300	97.994	-3.6	0.000	0.000	0.000	0.000	Bus262	0.593	0.442	69.2	80.2	
								Bus267	-0.593	-0.442	69.2	80.2	
Bus264	0.400	95.852	-3.4	0.000	0.000	0.551	0.413	Bus265	-0.551	-0.413	1037.6	80.0	
Bus265	0.400	101.558	-4.5	0.000	0.000	0.000	0.000	Bus264	0.592	0.427	1037.6	81.1	
								Bus266	-0.592	-0.427	1037.6	81.1	
Bus266	6.300	97.994	-3.6	0.000	0.000	0.000	0.000	Bus265	0.593	0.442	69.2	80.2	
								Bus267	-0.593	-0.442	69.2	80.2	
Bus267	6.300	97.994	-3.6	0.000	0.000	0.000	0.000	SG4	-1.187	-0.883	138.4	80.2	
								Bus263	0.593	0.442	69.2	80.2	
								Bus266	0.593	0.442	69.2	80.2	
Bus272	6.300	99.647	-2.5	0.000	0.000	0.000	0.000	SG5	9.157	5.894	1001.5	84.1	
								Bus273	-9.157	-5.894	1001.5	84.1	
Bus273	70.000	99.021	-0.6	0.000	0.000	0.000	0.000	Bus272	9.174	6.349	92.9	82.2	
								Bus96	-9.174	-6.349	92.9	82.2	
Bus278	6.300	99.593	-2.6	0.000	0.000	1.722	1.068	SG7	-1.722	-1.068	186.5	85.0	
Bus279	6.300	99.593	-2.6	0.000	0.000	1.722	1.068	SG7	-1.722	-1.068	186.5	85.0	
Bus280	6.300	99.625	-2.5	0.000	0.000	0.268	0.166	SG7	-0.268	-0.166	29.0	85.0	
Bus284	6.300	99.617	-2.5	0.000	0.000	0.000	0.000	SG7	-0.613	-0.456	70.3	80.2	
								Bus285	0.613	0.456	70.3	80.2	

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Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:			Study Case: LF	Revision:	Base
Filename:	Sistem Tonasa 2022			Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus285	0.400	103.239	-3.4	0.000	0.000	0.000	0.000	Bus286	0.612	0.441	1054.8	81.1	
								Bus284	-0.612	-0.441	1054.8	81.1	
Bus286	0.400	97.439	-2.3	0.000	0.000	0.570	0.427	Bus285	-0.570	-0.427	1054.8	80.0	
Bus287	6.300	99.630	-2.5	0.000	0.000	0.000	0.000	SG7	-0.315	-0.237	36.3	79.9	
								Bus288	0.315	0.237	36.3	79.9	
Bus288	0.400	103.446	-3.2	0.000	0.000	0.000	0.000	Bus289	0.314	0.231	543.8	80.6	
								Bus287	-0.314	-0.231	543.8	80.6	
Bus289	0.400	100.461	-2.6	0.000	0.000	0.303	0.227	Bus288	-0.303	-0.227	543.8	80.0	
Bus290	6.300	99.626	-2.5	0.000	0.000	0.000	0.000	Bus307	-0.400	-0.300	46.0	80.0	
								Bus291	0.400	0.300	46.0	80.0	
Bus291	0.400	103.350	-3.2	0.000	0.000	0.000	0.000	Bus292	0.399	0.292	689.8	80.7	
								Bus290	-0.399	-0.292	689.8	80.7	
Bus292	0.400	99.560	-2.6	0.000	0.000	0.381	0.285	Bus291	-0.381	-0.285	689.8	80.0	
Bus300	6.300	99.593	-2.6	0.000	0.000	1.722	1.068	SG6	-1.722	-1.068	186.5	85.0	
Bus301	6.300	99.593	-2.6	0.000	0.000	1.722	1.068	SG6	-1.722	-1.068	186.5	85.0	
Bus302	6.300	99.625	-2.5	0.000	0.000	0.268	0.166	SG6	-0.268	-0.166	29.0	85.0	
Bus307	6.300	99.642	-2.5	0.000	0.000	0.000	0.000	Bus290	0.400	0.300	46.0	80.0	
								Bus310	0.400	0.300	46.0	80.0	
								SG6	-0.800	-0.600	91.9	80.0	
Bus308	0.400	99.562	-2.6	0.000	0.000	0.381	0.285	Bus309	-0.381	-0.285	689.8	80.0	
Bus309	0.400	103.351	-3.2	0.000	0.000	0.000	0.000	Bus308	0.399	0.292	689.8	80.7	
								Bus310	-0.399	-0.292	689.8	80.7	
Bus310	6.300	99.627	-2.5	0.000	0.000	0.000	0.000	Bus307	-0.400	-0.300	46.0	80.0	
								Bus309	0.400	0.300	46.0	80.0	
Bus312	70.000	99.021	-0.6	0.000	0.000	0.000	0.000	Bus96	-36.242	-14.903	326.4	92.5	
								Bus217	36.242	14.903	326.4	92.5	
Bus353	70.000	99.302	-0.4	0.000	0.000	0.000	0.000	Bus360 - 830	-45.479	-21.435	417.6	90.5	
								Bus95	45.479	21.435	417.6	90.5	
Bus360 - 830	70.000	99.302	-0.4	0.000	0.000	0.000	0.000	Bus353	45.479	21.435	417.6	90.5	
								Bus24	31.345	8.564	269.9	96.5	
								Bus2- 1100	-76.825	-29.999	685.0	93.1	
Bus489	70.000	99.012	-0.7	0.000	0.000	0.000	0.000	B.PLN	-31.292	-8.427	270.0	96.6	
								580 OB 02	31.292	8.427	270.0	96.6	

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Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:			Study Case: LF	Revision:	Base
Filename:	Sistem Tonasa 2022			Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus507	6.300	98.071	-3.6	0.000	0.000	1.406	0.871	Bus12	-1.406	-0.871	154.6	85.0	
Bus508	6.300	98.071	-3.6	0.000	0.000	1.406	0.871	Bus13	-1.406	-0.871	154.6	85.0	
Bus512	6.300	98.079	-3.6	0.000	0.000	0.000	0.000	Bus513	0.480	0.359	56.0	80.1	
								Bus16	-0.480	-0.359	56.0	80.1	
Bus513	0.400	101.659	-4.4	0.000	0.000	0.000	0.000	Bus514	0.479	0.348	840.4	80.9	
								Bus512	-0.479	-0.348	840.4	80.9	
Bus514	0.400	97.040	-3.5	0.000	0.000	0.452	0.339	Bus513	-0.452	-0.339	840.4	80.0	
Bus515	6.300	98.021	-3.6	0.000	0.000	0.000	0.000	Bus516	0.480	0.359	56.0	80.1	
								Bus17	-0.480	-0.359	56.0	80.1	
Bus516	0.400	101.599	-4.4	0.000	0.000	0.000	0.000	Bus517	0.478	0.348	839.9	80.9	
								Bus515	-0.478	-0.348	839.9	80.9	
Bus517	0.400	96.983	-3.5	0.000	0.000	0.451	0.339	Bus516	-0.451	-0.339	839.9	80.0	
CON L1	70.000	99.012	-0.7	0.000	0.000	0.000	0.000	GANTRY 1	-5.571	1.247	47.6	-97.6	
								580 OB 01	5.571	-1.247	47.6	-97.6	
CON L2	70.000	99.012	-0.7	0.000	0.000	0.000	0.000	GANTRY 2	-5.576	1.235	47.6	-97.6	
								580 OB 01	5.576	-1.235	47.6	-97.6	
DIST.EBB22KV.01	22.000	98.518	-1.2	0.000	0.000	0.000	0.000	DIST.EBB22KV.02	0.970	0.470	28.7	90.0	
								DIST.EBB70KV.06	-0.970	-0.470	28.7	90.0	
DIST.EBB22KV.02	22.000	98.513	-1.2	0.000	0.000	0.000	0.000	DIST.EBB22KV.01	-0.970	-0.470	28.7	90.0	
								DIST.EBB22KV.05	0.534	0.258	15.8	90.0	
								DIST.EBB22KV.04	0.437	0.212	12.9	90.0	
DIST.EBB22KV.04	22.000	98.513	-1.2	0.000	0.000	0.437	0.212	DIST.EBB22KV.02	-0.437	-0.212	12.9	90.0	
DIST.EBB22KV.05	22.000	98.510	-1.2	0.000	0.000	0.534	0.258	DIST.EBB22KV.02	-0.534	-0.258	15.8	90.0	
DIST.EBB70KV.03	70.000	98.980	-0.7	0.000	0.000	0.000	0.000	DIST.EBB70KV.08	-0.489	-0.251	4.6	89.0	
								DIST.EBB70KV.09	-0.482	-0.229	4.4	90.3	
								DIST.EBB70KV.07	0.971	0.480	9.0	89.6	
DIST.EBB70KV.06	70.000	98.980	-0.7	0.000	0.000	0.000	0.000	DIST.EBB22KV.01	0.971	0.480	9.0	89.6	
								DIST.EBB70KV.07	-0.971	-0.480	9.0	89.6	
DIST.EBB70KV.07	70.000	98.980	-0.7	0.000	0.000	0.000	0.000	DIST.EBB70KV.03	-0.971	-0.480	9.0	89.6	
								DIST.EBB70KV.06	0.971	0.480	9.0	89.6	
DIST.EBB70KV.08	70.000	98.980	-0.7	0.000	0.000	0.000	0.000	DIST.EBB70KV.03	0.489	0.251	4.6	89.0	
								DIST.LIBB70KV	-0.489	-0.251	4.6	89.0	
DIST.EBB70KV.09	70.000	98.980	-0.7	0.000	0.000	0.000	0.000	DIST.EBB70KV.03	0.482	0.229	4.4	90.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								DIST.L2BB70KV	-0.482	-0.229	4.4	90.3	
DIST.L1BB70KV	70.000	98.980	-0.7	0.000	0.000	0.000	0.000	GANTRY 1	-0.489	-0.251	4.6	89.0	
								DIST.EBB70KV.08	0.489	0.251	4.6	89.0	
DIST.L2BB70KV	70.000	98.980	-0.7	0.000	0.000	0.000	0.000	GANTRY 2	-0.482	-0.229	4.4	90.3	
								DIST.EBB70KV.09	0.482	0.229	4.4	90.3	
ESG1	6.300	98.021	-3.6	0.000	0.000	0.000	0.000	SG4	-0.479	-0.357	55.9	80.2	
								Bus34	0.479	0.358	55.9	80.2	
								Bus35	0.000	-0.001	0.1	0.0	
GANTRY 1	70.000	99.015	-0.7	0.000	0.000	0.000	0.000	Bus18	-6.061	1.258	51.6	-97.9	
								CON L1	5.572	-1.259	47.6	-97.5	
								DIST.L1BB70KV	0.489	0.001	4.1	100.0	
GANTRY 2	70.000	99.015	-0.7	0.000	0.000	0.000	0.000	Bus15	-6.059	1.264	51.6	-97.9	
								CON L2	5.576	-1.247	47.6	-97.6	
								DIST.L2BB70KV	0.482	-0.017	4.0	-99.9	
* GI PI.N	70.000	100.000	0.0	77.126	30.727	0.000	0.000	Bus26	38.563	15.364	342.4	92.9	
								Bus105	38.563	15.364	342.4	92.9	
SB.SS51.1	6.300	102.636	-2.9	0.000	0.000	0.000	0.000	B.INT1	0.000	-0.001	0.1	0.0	
								582ER52AMB01	4.738	3.514	526.7	80.3	
								581SS51MB01	-4.738	-3.513	526.7	80.3	
SB.SS53.1	6.300	100.610	-3.6	0.000	0.000	0.000	0.000	582ER54MB01	8.783	5.717	954.6	83.8	
								SS53MV11->581SS53MV04 ~ 581SS53MB01	0.000 -8.783	-0.001 -5.716	0.1 954.5	0.0 83.8	
SB.SS53.2	6.300	100.610	-3.6	0.000	0.000	0.000	0.000	582ER58B	5.581	3.603	605.1	84.0	
								SS53MV09->581SS53MV05 ~ 581SS53MB01	0.000 -5.581	-0.001 -3.602	0.1 605.0	0.0 84.0	
SG1	6.300	99.237	-2.8	0.000	0.000	0.000	0.000	Bus168	-10.102	-6.619	1115.3	83.6	
								SG2	5.856	3.850	647.2	83.6	
								SG3	4.246	2.769	468.1	83.8	
SG2	6.300	99.237	-2.8	0.000	0.000	0.000	0.000	Bus172	0.959	0.593	104.1	85.1	
								Bus176	0.312	0.233	36.0	80.1	
								Bus182	0.251	0.188	29.0	80.0	
								Bus185	0.202	0.151	23.3	80.0	
								Bus174	1.409	0.873	153.1	85.0	

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Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:				Revision:	Base
Filename:	Sistem Tonasa 2022	Study Case: LF		Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Bus175	1.739	1.078	188.9	85.0	
								SG1	-5.856	-3.850	647.2	83.6	
								Bus171	0.983	0.734	113.3	80.1	
SG3	6.300	99.237	-2.8	0.000	0.000	0.000	0.000	Bus196	1.407	0.871	152.8	85.0	
								Bus198	1.739	1.078	188.9	85.0	
								Bus202	0.492	0.367	56.6	80.1	
								Bus205	0.609	0.453	70.0	80.2	
								SG1	-4.246	-2.769	468.1	83.8	
SG4	6.300	98.082	-3.6	0.000	0.000	0.000	0.000	Bus219	0.774	0.579	90.3	80.1	
								Bus4	0.969	0.637	108.4	83.6	
								Bus7	0.969	0.637	108.4	83.6	
								Bus9	0.305	0.228	35.6	80.1	
								Bus10	0.374	0.231	41.1	85.1	
								Bus11	0.388	0.240	42.6	85.1	
								Bus267	1.188	0.883	138.3	80.2	
								Bus12	1.406	0.871	154.6	85.0	
								Bus13	1.406	0.871	154.6	85.0	
								Bus16	0.480	0.359	56.0	80.1	
								Bus17	0.480	0.358	56.0	80.2	
								ESG1	0.480	0.357	55.9	80.3	
								SG4A	3.790	2.460	422.2	83.9	
								Bus215	-13.938	-9.227	1561.8	83.4	
								Bus220	0.290	0.185	32.2	84.3	
								Bus222	0.290	0.186	32.2	84.2	
								Bus224	0.348	0.144	35.2	92.4	
SG4A	6.300	97.620	-3.6	0.000	0.000	0.000	0.000	SG4	-3.771	-2.451	422.2	83.8	
								Bus45	0.479	0.354	55.9	80.4	
								Bus53	0.479	0.354	55.9	80.4	
								Bus57	1.406	0.871	155.3	85.0	
								Bus59	1.406	0.871	155.3	85.0	
SG5	6.300	99.642	-2.5	0.000	0.000	0.000	0.000	Bus272	-9.157	-5.895	1001.6	84.1	
								SG7	4.643	2.994	508.1	84.0	
								SG6	4.514	2.901	493.5	84.1	

Project:	ETAP	Page:	18
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SG6	6.300	99.642	-2.5	0.000	0.000	0.000	0.000	Bus300	1.723	1.068	186.4	85.0	
								Bus301	1.723	1.068	186.4	85.0	
								Bus302	0.268	0.166	29.0	85.0	
								SG5	-4.514	-2.901	493.5	84.1	
								Bus307	0.800	0.600	91.9	80.0	
SG7	6.300	99.642	-2.5	0.000	0.000	0.000	0.000	Bus278	1.723	1.068	186.4	85.0	
								Bus279	1.723	1.068	186.4	85.0	
								Bus280	0.268	0.166	29.0	85.0	
								Bus284	0.613	0.456	70.3	80.2	
								Bus287	0.315	0.237	36.2	79.9	
								SG5	-4.643	-2.994	508.1	84.0	
SS53MV09->581SS53MV05 ~	6.300	100.610	-3.6	0.000	0.000	0.000	0.000	SB.SS53.2	0.000	0.000	0.0	0.0	
SS53MV11->581SS53MV04 ~	6.300	100.610	-3.6	0.000	0.000	0.000	0.000	SB.SS53.1	0.000	0.000	0.0	0.0	
SS53MV08->B.582ER59~	6.300	100.486	-4.1	0.000	0.000	0.000	0.000	Bus19	0.000	0.000	0.0	0.0	
BTGN.G01.KBL11KV.01~	11.000	102.000	0.0	0.000	0.000	0.000	0.000	BTGN.G01.BB11KV.01	0.000	0.000	0.0	0.0	
BTGN.G02.KBL11KV.01~	11.000	102.000	0.0	0.000	0.000	0.000	0.000	BTGN.G02.BB11KV.01	0.000	0.000	0.0	0.0	
BTGE.G01.KBL6KV.01~	6.300	102.000	0.0	0.000	0.000	0.000	0.000	BTGE.G01.BB6KV.01	0.000	0.000	0.0	0.0	
BTGE.G02.KBL6KV.01~	6.300	102.000	0.0	0.000	0.000	0.000	0.000	BTGE.G02.BB6KV.01	0.000	0.000	0.0	0.0	
VFD1	0.400	100.000	0.0	0.931	0.577	0.000	0.000	EP FAN~	0.931	0.577	1580.3	85.0	
VFD2	6.300	100.000	0.0	1.142	0.708	0.000	0.000	KIDF.2~	1.142	0.708	123.1	85.0	
VFD3	6.300	100.000	0.0	1.142	0.708	0.000	0.000	KIDF.1~	1.142	0.708	123.1	85.0	
VFD4	0.400	100.000	0.0	0.134	0.083	0.000	0.000	CMBF 545FN05~	0.134	0.083	228.2	85.0	
VFD5	0.690	100.000	0.0	0.185	0.115	0.000	0.000	M544FN02~	0.185	0.115	182.2	85.0	
VFD6	0.690	100.000	0.0	0.268	0.166	0.000	0.000	M544FN01~	0.268	0.166	263.6	85.0	
VFD7	1.725	100.000	0.0	0.289	0.179	0.000	0.000	EP FAN RM 1~	0.289	0.179	113.8	85.0	
VFD8	1.725	100.000	0.0	0.289	0.179	0.000	0.000	EP FAN RM 2~	0.289	0.179	113.8	85.0	
VFD9	0.400	100.000	0.0	0.197	0.122	0.000	0.000	RAW MILL C M532FN11~	0.197	0.122	335.0	85.0	
VFD10	6.300	100.000	0.0	1.274	0.510	0.000	0.000	M552FN15~	1.274	0.510	125.7	92.9	
VFD11	0.690	100.000	0.0	0.180	0.111	0.000	0.000	M552SR01~	0.180	0.111	177.0	85.0	
VFD13	6.000	100.000	0.0	1.274	0.790	0.000	0.000	M553FN15~	1.274	0.790	144.2	85.0	
VFD14	0.690	100.000	0.0	0.180	0.111	0.000	0.000	M553SR01~	0.180	0.111	177.0	85.0	
VFD15	1.725	100.000	0.0	0.965	0.598	0.000	0.000	ID FAN 1 PREHEATER~	0.965	0.598	380.0	85.0	

Project:	ETAP	Page:	19
Location:	19.0.1C	Date:	21-11-2022
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: Sistem Tonasa 2022		Config.:	PLN 100%

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
VFD16	1.725	100.000	0.0	0.965	0.598	0.000	0.000	ID FAN 2 PREHEATER~	0.965	0.598	380.0	85.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

# Indicates a bus with a load mismatch of more than 0.1 MVA

Lampiran 4 Hasil Neraca Daya Konfigurasi 1

Project:		ETAP		Page:	71
Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:		Study Case: LF		Revision:	Base
Filename:	Sistem Tonasa 2022			Config.:	PLTU 100%

SUMMARY OF TOTAL GENERATION , LOADING & DEMAND

	MW	Mvar	MVA	% PF
Source (Swing Buses):	77.441	41.347	87.788	88.21 Lagging
Source (Non-Swing Buses):	0.000	0.000	0.000	
Total Demand:	77.441	41.347	87.788	88.21 Lagging
Total Motor Load:	60.229	38.668	71.574	84.15 Lagging
Total Static Load:	13.403	-13.303	18.884	70.97 Leading
Total Constant I Load:	0.000	0.000	0.000	
Total Generic Load:	0.000	0.000	0.000	
Apparent Losses:	3.809	15.982		
System Mismatch:	0.000	0.000		

Number of Iterations: 1

Lampiran 5 Hasil Neraca Daya Konfigurasi 2

Project:		ETAP		Page:	67
Location:		19.0.1C		Date:	21-11-2022
Contract:				SN:	
Engineer:		Study Case: LF		Revision:	Base
Filename:	Sistem Tonasa 2022			Config.:	PLN 100%

SUMMARY OF TOTAL GENERATION , LOADING & DEMAND

	MW	Mvar	MVA	% PF
Source (Swing Buses):	77.126	30.722	83.020	92.90 Lagging
Source (Non-Swing Buses):	0.000	0.000	0.000	
Total Demand:	77.126	30.722	83.020	92.90 Lagging
Total Motor Load:	60.229	38.668	71.574	84.15 Lagging
Total Static Load:	14.609	-14.585	20.643	70.77 Leading
Total Constant I Load:	0.000	0.000	0.000	
Total Generic Load:	0.000	0.000	0.000	
Apparent Losses:	2.288	6.639		
System Mismatch:	0.000	0.000		

Number of Iterations: 1