

## LAMPIRAN

**Lampiran 1: Data Arus Beban Penyulang Bantul (2010)**

NO	NAMA GI	NO TRAFO	KAPASITAS MVA	PENYULANG	BULAN											
					JAN	PEB	MRT	APR	MEI	JNI	JLI	AGT	SEP	OKT	NOP	DES
1	BANTUL	I	60	BNL 1	207	194	187	190	187	188	187	188	192	197	156	171
				BNL 2	111	115	101	114	193	97	93	97	96	97	82	79
				BNL 3	227	214	193	227	222	217	204	208	212	231	200	207
				BNL 5	366	320	312	329	321	322	307	320	327	340	292	304
		II	60	BNL 6	240	247	130	188	185	212	209	205	198	211	165	116
				BNL 7	252	212	255	277	274	289	269	265	267	238	239	267
				BNL 8	91	92	80	101	102	74	77	78	77	81	65	71
				BNL 9	77	76	80	73	79	75	74	72	72	51	61	63
				BNL 10	40	43	40	43	41	44	0	46	37	39	42	33
				BNL 11	204	238	250	237	239	235	247	240	249	225	244	218
				BNL 12	170	165	160	147	162	170	170	165	165	175	153	163
				BNL 13	80	20	40	25	0	50	60	40	25	25	60	35

**Lampiran 2: Losses Summary Report Penyulang Bantul 7 kondisi existing  
(sebelum Pemasangan DG)**

Branch Losses Summary Report

CKT / Branch	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd	
	ID	MW	Mvar	MW	Mvar	kW	kvar	From		To
T3 GI BANTUL		8.295	5.605	-8.290	-5.446	4.7	158.6	100.0	99.1	0.92
Cable1		8.290	5.446	-8.234	-5.418	56.7	28.5	99.1	98.5	0.63
Cable2		6.622	4.361	-6.585	-4.342	36.7	18.4	98.5	97.9	0.51
Z 001 S 001		0.317	0.207	-0.314	-0.194	3.3	12.9	98.5	95.9	2.52
Z 001 S 002		0.140	0.091	-0.138	-0.085	1.8	5.7	98.5	95.7	2.71
Z 001 S 003		0.254	0.166	-0.251	-0.156	2.6	10.3	98.5	95.9	2.52
Z 001 S 004		0.417	0.274	-0.414	-0.257	3.0	17.4	98.5	96.1	2.34
Z 001 S 005		0.484	0.319	-0.481	-0.298	2.8	20.1	98.5	96.2	2.25
Cable3		4.453	2.926	-4.436	-2.918	16.7	8.4	97.9	97.6	0.34
Z 002 S 001		0.139	0.091	-0.138	-0.085	1.8	5.7	97.9	95.2	2.72
Z 002 S 002		0.840	0.557	-0.835	-0.517	5.7	40.1	97.9	95.4	2.57
Z 002 S 003		0.161	0.105	-0.158	-0.098	2.1	6.6	97.9	95.2	2.72
Z 002 S 004		0.865	0.580	-0.858	-0.532	6.8	48.5	97.9	94.9	3.01
Z 002 S 005		0.127	0.083	-0.125	-0.078	1.7	5.1	97.9	95.3	2.68
Cable4		3.389	2.217	-3.380	-2.213	9.7	4.9	97.6	97.3	0.26
Z 003 S 000		1.047	0.700	-1.042	-0.646	5.1	54.7	97.6	95.0	2.63
Cable5		2.595	1.696	-2.590	-1.693	5.7	2.9	97.3	97.1	0.20
Z 004 S 000		0.784	0.516	-0.779	-0.483	4.7	33.3	97.3	95.1	2.27
Cable6		2.526	1.652	-2.521	-1.649	5.5	2.7	97.1	96.9	0.20
Z 005 S000		0.063	0.041	-0.062	-0.039	1.0	2.5	97.1	94.3	2.85
Cable7		2.260	1.479	-2.256	-1.477	4.4	2.2	96.9	96.8	0.18
Z 006 S 000		0.261	0.171	-0.258	-0.160	2.7	10.8	96.9	94.4	2.52
Cable8		2.214	1.449	-2.209	-1.447	4.2	2.1	96.8	96.6	0.17
Z 007 S 000		0.042	0.027	-0.041	-0.026	0.7	1.7	96.8	93.9	2.85
Cable9		1.958	1.282	-1.954	-1.281	3.3	1.7	96.6	96.4	0.15
Z 008 S 000		0.252	0.165	-0.249	-0.154	2.7	10.6	96.6	94.0	2.55
Cable10		1.841	1.206	-1.838	-1.205	2.9	1.5	96.4	96.3	0.14
Z 009 S 000		0.113	0.074	-0.112	-0.069	1.5	4.6	96.4	93.8	2.66
Cable11		1.817	1.191	-1.814	-1.190	2.9	1.4	96.3	96.2	0.14

Z 010 S 000	0.021	0.014	-0.021	-0.013	0.3	0.9	96.3	93.4	2.86
Cable12	1.521	0.998	-1.519	-0.997	2.0	1.0	96.2	96.0	0.12
Z 011 S 000	0.293	0.192	-0.290	-0.180	3.1	12.4	96.2	93.6	2.56
Cable13	1.247	0.818	-1.245	-0.817	1.4	0.7	96.0	95.9	0.10
Z 012 S 000	0.272	0.178	-0.269	-0.167	2.9	11.6	96.0	93.5	2.56
Cable14	1.170	0.768	-1.168	-0.768	1.2	0.6	95.9	95.9	0.09
Z 014 S 000	0.076	0.049	-0.074	-0.046	1.0	3.2	95.9	93.2	2.72
Cable15	0.751	0.493	-0.751	-0.493	0.5	0.2	95.9	95.8	0.06
Z 016 S 000	0.417	0.275	-0.415	-0.257	2.5	17.7	95.9	93.6	2.23
Cable16	0.334	0.220	-0.334	-0.220	0.1	0.0	95.8	95.8	0.03
Z 018 S 000	0.417	0.273	-0.415	-0.257	2.3	16.1	95.8	93.8	2.03
Z 019 S 000	0.334	0.220	-0.331	-0.205	2.5	14.2	95.8	93.4	2.33
T1							100.0	100.0	
					223.4	602.6			

### Lampiran 3: Losses Summary Report Penyulang Bantul 7 kondisi Setelah Pemasangan DG pada Bus 44

#### Branch Losses Summary Report

CKT / Branch	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd	
	ID	MW	Mvar	MW	Mvar	kW	kvar	From		To
T3 GI BANTUL		5.607	3.819	-5.605	-3.747	2.1	72.8	100.0	99.4	0.63
Cable1		5.605	3.747	-5.578	-3.733	26.0	13.1	99.4	98.9	0.43
Cable2		3.964	2.675	-3.950	-2.668	13.2	6.6	98.9	98.6	0.30
Z 001 S 001		0.318	0.208	-0.314	-0.195	3.2	12.8	98.9	96.4	2.51
Z 001 S 002		0.140	0.091	-0.138	-0.086	1.8	5.6	98.9	96.2	2.70
Z 001 S 003		0.254	0.166	-0.251	-0.156	2.6	10.3	98.9	96.4	2.51
Z 001 S 004		0.418	0.275	-0.415	-0.257	3.0	17.3	98.9	96.6	2.33
Z 001 S 005		0.485	0.319	-0.482	-0.299	2.8	20.0	98.9	96.7	2.24
Cable3		1.812	1.249	-1.810	-1.248	2.8	1.4	98.6	98.5	0.14

Z 002 S 001	0.140	0.091	-0.138	-0.086	1.8	5.7	98.6	95.9	2.71
Z 002 S 002	0.843	0.558	-0.837	-0.519	5.6	39.8	98.6	96.1	2.55
Z 002 S 003	0.161	0.105	-0.159	-0.098	2.1	6.5	98.6	95.9	2.70
Z 002 S 004	0.867	0.581	-0.861	-0.533	6.8	48.0	98.6	95.6	3.00
Z 002 S 005	0.127	0.083	-0.125	-0.078	1.6	5.1	98.6	96.0	2.67
Cable4	0.759	0.546	-0.759	-0.546	0.5	0.3	98.5	98.4	0.06
Z 003 S 000	1.050	0.702	-1.045	-0.648	5.1	54.1	98.5	95.9	2.61
Cable5	-0.029	0.028	0.029	-0.028	0.0	0.0	98.4	98.4	0.00
Z 004 S 000	0.788	0.518	-0.783	-0.485	4.6	32.8	98.4	96.2	2.25
Cable6	-0.093	-0.013	0.093	0.013	0.0	0.0	98.4	98.5	0.01
Z 005 S000	0.064	0.041	-0.063	-0.039	1.0	2.5	98.4	95.6	2.82
Cable7	-0.355	-0.185	0.355	0.185	0.1	0.0	98.5	98.5	0.03
Z 006 S 000	0.262	0.171	-0.259	-0.161	2.7	10.6	98.5	96.0	2.50
Cable8	-0.397	-0.212	0.397	0.212	0.1	0.1	98.5	98.5	0.03
Z 007 S 000	0.042	0.028	-0.042	-0.026	0.7	1.7	98.5	95.7	2.82
Cable9	-0.651	-0.378	0.651	0.378	0.3	0.2	98.5	98.6	0.05
Z 008 S 000	0.254	0.166	-0.251	-0.156	2.6	10.3	98.5	96.0	2.52
Cable10	-0.766	-0.453	0.766	0.453	0.5	0.2	98.6	98.6	0.06
Z 009 S 000	0.114	0.074	-0.113	-0.070	1.4	4.5	98.6	95.9	2.62
Cable11	-0.787	-0.467	0.788	0.467	0.5	0.2	98.6	98.7	0.06
Z 010 S 000	0.021	0.014	-0.021	-0.013	0.3	0.8	98.6	95.8	2.82
Cable12	-1.084	-0.661	1.085	0.661	0.9	0.5	98.7	98.8	0.08
Z 011 S 000	0.296	0.194	-0.293	-0.182	3.0	12.0	98.7	96.2	2.51
Cable13	-1.360	-0.841	1.361	0.842	1.5	0.7	98.8	98.9	0.10
Z 012 S 000	0.275	0.180	-0.272	-0.169	2.8	11.1	98.8	96.2	2.51
Cable14	-1.437	-0.891	1.439	0.892	1.7	0.8	98.9	99.0	0.11
Z 014 S 000	0.076	0.050	-0.075	-0.047	1.0	3.0	98.9	96.2	2.66
Cable15	-1.861	-1.169	1.864	1.171	2.8	1.4	99.0	99.1	0.14
Z 016 S 000	0.422	0.277	-0.420	-0.260	2.4	17.0	99.0	96.8	2.18
Cable16	-2.286	-1.447	2.290	1.449	4.2	2.1	99.1	99.3	0.17
Z 018 S 000	0.422	0.276	-0.420	-0.260	2.2	15.4	99.1	97.1	1.98
Cable17	-2.629	-1.670	2.633	1.672	3.7	1.9	99.3	99.4	0.13
Z 019 S 000	0.338	0.222	-0.336	-0.208	2.3	13.6	99.3	97.0	2.27
T1	-2.633	-1.672	2.634	1.704	1.7	31.9	99.4	100.0	0.60

126.3      494.6

**Lampiran 4: Losses Summary Report Penyulang Bantul 11 kondisi existing  
(sebelum Pemasangan DG)**

<u>Branch Losses Summary Report</u>									
CKT / Branch	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd
ID	MW	Mvar	MW	Mvar	kW	kvar	From	To	% Drop in Vmag
T1	7.145	4.897	-7.142	-4.779	3.5	118.8	100.0	99.2	0.80
Cable 1	7.142	4.779	-7.099	-4.757	42.5	21.3	99.2	98.7	0.54
Cable 2	3.223	2.144	-3.214	-2.139	8.7	4.4	98.7	98.4	0.25
Z 001 S 001	0.820	0.558	-0.813	-0.504	7.7	54.5	98.7	95.1	3.60
Z 001 S 003	0.233	0.155	-0.229	-0.142	4.1	12.6	98.7	95.0	3.61
Z 001 S 004	0.026	0.017	-0.025	-0.016	0.5	1.2	98.7	95.3	3.40
Z 001 S 005	1.220	0.829	-1.209	-0.749	11.3	80.2	98.7	95.1	3.55
Z 001 S 006	0.110	0.073	-0.108	-0.067	1.9	5.8	98.7	95.2	3.49
Z 001 S 007	0.064	0.042	-0.063	-0.039	1.2	3.0	98.7	95.3	3.40
Z 001 S 008	0.305	0.203	-0.300	-0.186	4.4	17.3	98.7	95.1	3.52
Z 001 S 009	0.309	0.206	-0.305	-0.189	4.2	16.8	98.7	95.3	3.37
Z 001 S 010	0.204	0.135	-0.200	-0.124	3.5	10.9	98.7	95.1	3.59
Z 001 S 011	0.586	0.396	-0.579	-0.359	6.4	36.9	98.7	95.1	3.55
Cable 3	1.788	1.167	-1.785	-1.166	2.7	1.3	98.4	98.3	0.14
Z 002 S 000	1.426	0.972	-1.417	-0.878	8.8	93.5	98.4	95.1	3.33
Cable 4	1.671	1.091	-1.669	-1.090	2.3	1.2	98.3	98.1	0.13
Z 003 S 000	0.114	0.075	-0.113	-0.070	1.8	5.5	98.3	95.0	3.23
Cable 5	1.390	0.907	-1.389	-0.906	1.6	0.8	98.1	98.0	0.11
Z 005 S 000	0.279	0.182	-0.276	-0.171	2.9	11.6	98.1	95.6	2.56
Cable 6	1.338	0.873	-1.336	-0.873	1.5	0.8	98.0	97.9	0.10
Z 006 S 000	0.051	0.033	-0.050	-0.031	0.8	1.9	98.0	95.3	2.71
Cable 7	1.062	0.692	-1.061	-0.692	0.9	0.5	97.9	97.9	0.08
Z 007 S 000	0.274	0.180	-0.271	-0.168	3.1	12.2	97.9	95.2	2.74
Cable 8	0.850	0.554	-0.849	-0.554	0.6	0.3	97.9	97.8	0.07
Z 008 S 000	0.211	0.138	-0.208	-0.129	2.8	8.5	97.9	95.2	2.68

Cable 9	0.790	0.515	-0.790	-0.515	0.5	0.3	97.8	97.7	0.06
Z 011 S 000	0.059	0.038	-0.058	-0.036	0.9	2.2	97.8	95.1	2.64
Cable 10	0.570	0.372	-0.570	-0.372	0.3	0.1	97.7	97.7	0.04
Z 013 S 000	0.219	0.143	-0.217	-0.134	2.3	9.0	97.7	95.2	2.51
Cable 11	0.380	0.248	-0.380	-0.248	0.1	0.1	97.7	97.7	0.03
Z 014 S 000	0.190	0.124	-0.188	-0.116	2.5	7.7	97.7	95.0	2.68
Cable 12	0.215	0.140	-0.215	-0.140	0.0	0.0	97.7	97.6	0.02
Z 016 S 000	0.165	0.107	-0.162	-0.101	2.2	6.7	97.7	95.0	2.68
Cable 13	0.148	0.096	-0.148	-0.096	0.0	0.0	97.6	97.6	0.01
Z 017 S 000	0.068	0.044	-0.067	-0.041	0.9	2.7	97.6	95.0	2.60
Z 018 S 000	0.148	0.096	-0.146	-0.090	1.9	6.0	97.6	94.9	2.68
T50							100.0	100.0	
					141.2	556.6			

### Lampiran 5: Losses Summary Report Penyulang Bantul 11 kondisi Setelah Pemasangan DG pada Bus 69

<u>Branch Losses Summary Report</u>									
CKT / Branch	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd % Drop in Vmag
ID	MW	Mvar	MW	Mvar	kW	kvar	From	To	
T1	5.693	3.875	-5.691	-3.800	2.2	75.1	100.0	99.4	0.64
Cable 1	5.691	3.800	-5.664	-3.786	26.8	13.5	99.4	98.9	0.43
Cable 2	1.784	1.171	-1.781	-1.170	2.6	1.3	98.9	98.8	0.14
Z 001 S 001	0.821	0.559	-0.814	-0.504	7.7	54.3	98.9	95.3	3.59
Z 001 S 003	0.234	0.155	-0.229	-0.142	4.1	12.6	98.9	95.3	3.60
Z 001 S 004	0.026	0.017	-0.025	-0.016	0.5	1.2	98.9	95.5	3.39
Z 001 S 005	1.222	0.830	-1.210	-0.750	11.3	79.9	98.9	95.4	3.55
Z 001 S 006	0.110	0.073	-0.109	-0.067	1.9	5.7	98.9	95.4	3.49
Z 001 S 007	0.064	0.042	-0.063	-0.039	1.2	3.0	98.9	95.5	3.39
Z 001 S 008	0.305	0.204	-0.301	-0.186	4.4	17.3	98.9	95.4	3.51
Z 001 S 009	0.309	0.206	-0.305	-0.189	4.2	16.8	98.9	95.6	3.36
Z 001 S 010	0.204	0.135	-0.200	-0.124	3.5	10.9	98.9	95.4	3.58
Z 001 S 011	0.586	0.396	-0.580	-0.360	6.4	36.8	98.9	95.4	3.54
Cable 3	0.353	0.197	-0.353	-0.197	0.1	0.0	98.8	98.8	0.03
Z 002 S 000	1.428	0.973	-1.419	-0.880	8.7	93.0	98.8	95.5	3.32

Cable 4	0.238	0.121	-0.238	-0.121	0.0	0.0	98.8	98.8	0.02
Z 003 S 000	0.115	0.075	-0.113	-0.070	1.8	5.5	98.8	95.6	3.21
Cable 5	-0.041	-0.061	0.041	0.061	0.0	0.0	98.8	98.8	0.00
Z 005 S 000	0.279	0.183	-0.276	-0.171	2.9	11.5	98.8	96.2	2.55
Cable 6	-0.092	-0.094	0.092	0.094	0.0	0.0	98.8	98.8	0.01
Z 006 S 000	0.051	0.033	-0.050	-0.031	0.8	1.9	98.8	96.1	2.70
Cable 7	-0.367	-0.275	0.367	0.275	0.1	0.1	98.8	98.8	0.03
Z 007 S 000	0.275	0.181	-0.272	-0.169	3.1	12.1	98.8	96.0	2.73
Cable 8	-0.579	-0.413	0.579	0.413	0.3	0.1	98.8	98.8	0.05
Z 008 S 000	0.212	0.138	-0.209	-0.130	2.7	8.4	98.8	96.1	2.66
Cable 9	-0.639	-0.452	0.639	0.452	0.4	0.2	98.8	98.9	0.05
Z 011 S 000	0.059	0.038	-0.059	-0.036	0.9	2.1	98.8	96.2	2.62
Cable 10	-0.859	-0.596	0.860	0.596	0.6	0.3	98.9	99.0	0.07
Z 013 S 000	0.220	0.144	-0.218	-0.135	2.2	8.8	98.9	96.4	2.49
Cable 11	-1.051	-0.721	1.052	0.721	0.9	0.5	99.0	99.0	0.08
Z 014 S 000	0.191	0.124	-0.188	-0.117	2.4	7.6	99.0	96.3	2.66
Cable 12	-1.217	-0.829	1.219	0.829	1.3	0.6	99.0	99.1	0.09
Z 016 S 000	0.166	0.108	-0.163	-0.101	2.1	6.6	99.0	96.4	2.66
Cable 13	-1.287	-0.874	1.288	0.874	1.4	0.7	99.1	99.2	0.10
Z 017 S 000	0.068	0.044	-0.067	-0.042	0.8	2.6	99.1	96.6	2.57
Cable21	-1.437	-0.971	1.438	0.972	1.2	0.6	99.2	99.3	0.07
Z 018 S 000	0.149	0.097	-0.147	-0.091	1.9	5.9	99.2	96.6	2.66
T50	-1.438	-0.972	1.439	0.992	1.3	19.8	99.3	100.0	0.70
					114.6	517.2			