



SSEG APPLICATION CONTROL DOCUMENT

This Control Document is to be attached to each SSEG application. (Updated Feb 2023)

Application from (name):		Date:
Check	☒	Comments/Notes
GENERAL CHECKS		
RECEIVE APPLICATION FORM		
1. All information completed?		
2. Other Departmental permissions obtained? (as necessary)		
3. Installer accreditation? (if required)		
4. NERSA registration needed?		
5. Attachments supplied:		
5.1. NRS097-2-1 Test Certificate?		
5.2. Preliminary circuit diagram (if >100kVA)		
Notes/comments		Initial
EVALUATION OF APPLICATION AS PER NRS097-2-1 and NRS097-2-3 (Note: consult these standards where necessary or for queries)		
1. Basic compliance with NRS097-2-1:		
1.1. Earthing arrangements adequate?		
1.2. Test Certificate according to NRS097-2-1 adequate, from accredited test house? OR		
1.3. On approved inverter list? OR		
1.4. Other adequate protection information provided?		

1.5. If storage connected in parallel to EG via separate storage inverter: separate inverter NRS097-2-1 certification?		
Notes/comments		Initial
2. Basic compliance with NRS097-2-3 (if not compliant, specialist grid impact studies may be required):		
2.1. System is linked to LV network (not MV or HV)		
2.2. LV fault level at customer point of supply greater than 210A? (<i>fault current checks only relevant for synchronous or asynchronous generators >13.8kVA. Fault current issues are not anticipated for inverter-based generators</i>)		
Notes/comments		Initial

If on a <u>shared LV feeder</u>:		
2.2.1. SSEG kVA $\leq$ NMD / circuit breaker capacity (see relevant table in NRS097-2-3)		
2.2.3. SSEG max export kVA $\leq$ 25% of NMD / circuit breaker capacity (see relevant table in NRS097-2-3)		
2.2.4. SSEG storage: Max charging current $\leq$ 25% of NMD / circuit breaker capacity (see relevant table in NRS097-2-3)		
2.2.5. If max export >4.6kVA, is it balanced across phases?		
Notes/comments		Initial
If on a <u>dedicated LV feeder</u>		
2.2.6. SSEG kVA $\leq$ NMD (see relevant table in NRS097-2-3)		
2.2.7. SSEG max export kVA $\leq$ 75% of NMD (see relevant table in NRS097-2-3)		
2.2.8. SSEG storage: Max charging current $\leq$ 25% of NMD (see relevant table in NRS097-2-3)		
2.2.9. Feeder cable limits voltage rise to 1% (see graphs and tables in Annex to estimate)		
2.2.10. If max export >4.6kVA, is it balanced across phases?		

(if connection only single phase, can connect 100% of NMD – see NR097-2-3 section 4.3.5)		
Notes/comments		Initial
NETWORK CHECKS		
NETWORK CAPACITY CHECK		
3. Shared feeder ONLY: Total of all SSEG max exports on all shared feeders <25% of MV/LV transformer rating?		
4. Total SSEG max export on ALL LV feeders (shared and dedicated) <75% of MV/LV transformer rating?		
5. Total SSEG max export on MV feeder <15% of MV feeder peak load? (under all transformers supplied by the MV feeder)		
Notes/comments		Initial
6. If above checks OK, notify customer to proceed		
7. If above checks not OK, either:		
7.1. Request further information from customer, OR 7.2. Advise customer on SSEG system that would be acceptable (e.g. smaller system), OR 7.3. Inform customer that grid impact study required (and request meeting to discuss requirements)		
Notes/comments		Initial

IF GRID IMPACT STUDY REQUIRED: On completion of Study:		
NETWORK PLANNING CHECK		
8. Grid impact study indicate that generator installation can proceed?		
Notes/comments		Initial
9. Customer notified accordingly		
Notes/comments		Initial



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If installation to proceed, install METER, update records:

METERING

10. Request meter payment		
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Notes/comments

Initial

11. Install bi-directional meter (**once payment received**)

Notes/comments

Initial

RECORD KEEPING

12. Capture SSEG on database

Notes/comments

Initial



Installation takes place. Customer submits completed Commissioning Form**COMMISSIONING****Commissioning form assessment:**

13. All required information completed?		
14. kVA and key component make and model same as Application Form?		
15. Loss of mains test performed?		
16. Safety labels checked in accordance with NRS097-2-1		
17. Controls/settings to limit maximum export capacity adequate?		
18. Controls/settings to limit maximum storage charging current adequate?		
19. Signoff adequate?		
20. Attachments all present:		
20.1. Final circuit diagram		
20.2. NRS097-2-1 Test Certificate (if required)		
20.3. Storage inverter NRS097-2-1 Test Certificate (if installed)		
20.4. Electrical CoC and number		Number:
Notes/comments		Initial

If all OK: Activate TARIFF, Notify Customer, Update Records**RECORD KEEPING**

21. Update generator info on database		
Notes/comments		Initial

TARIFFS/BILLING

22. Activate SSEG tariff for customer		
Notes/comments		Initial

FINALISATION

23. Check that meter installed		
24. Check that SSEG tariff activated		
25. Inform customer that generation may proceed		
26. Close off process, archive		
Notes/comments	Initial	
End		

Annex: Cable voltage rise estimation

The below graphs and tables can be used to estimate voltage rise in cables as a function of generator size, cable types and lengths. The 'Gen (kW)' shows the maximum generator size that can be connected while still limiting voltage rise to 1% (Source: 2014 version of NRS097-2-3).

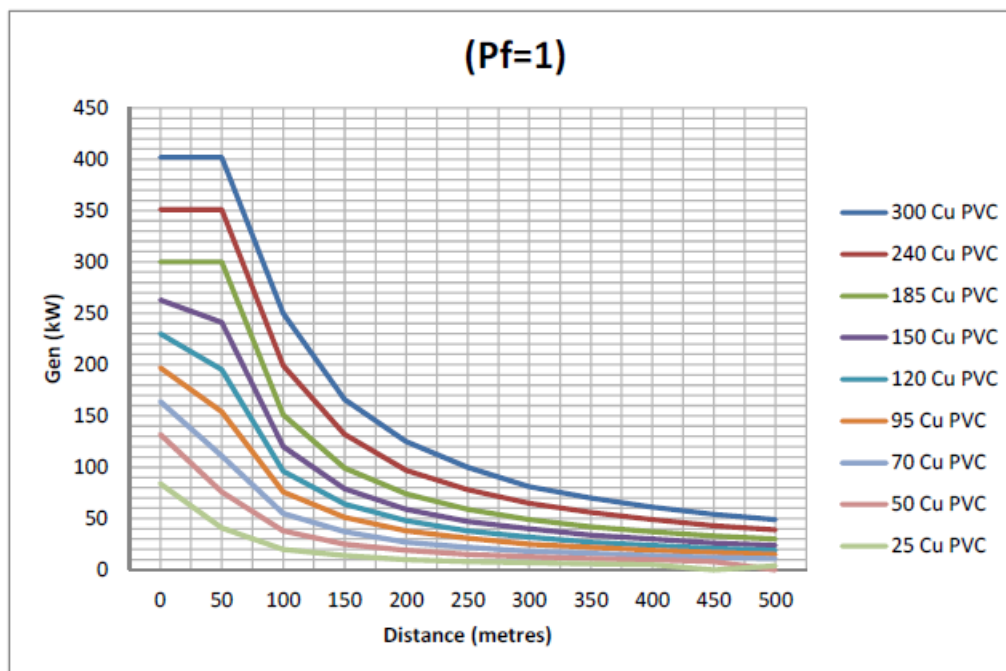


Figure 3 — Dedicated LV feeder maximum generator sizes as a function of PVC copper cable size and distance

Table 2 — Look-up values for a dedicated LV feeder maximum generator sizes (kVA) as a function of PVC copper cable size and distance

1	2	3	4	5	6	7	8	9	10
	Size mm ²								
	300 Cu PVC	240 Cu PVC	185 Cu PVC	150 Cu PVC	120 Cu PVC	95 Cu PVC	70 Cu PVC	50 Cu PVC	25 Cu PVC
Distance m	Generator sizes kVA								
0	402	351	300	263	230	197	164	132	84
50	402	351	300	241	195	154	111	76	41
100	250	199	151	120	96	76	55	38	20
150	166	132	99	79	64	51	37	25	14
200	125	97	74	59	48	38	27	19	10
250	100	78	59	47	38	31	22	15	8
300	81	65	49	40	32	25	18	13	7
350	70	56	42	34	27	22	16	11	6
400	61	49	37	30	24	19	14	10	5
450	54	43	33	26	21	17	12	8	4,5
500	49	39	30	24	19	15	11	7,5	4

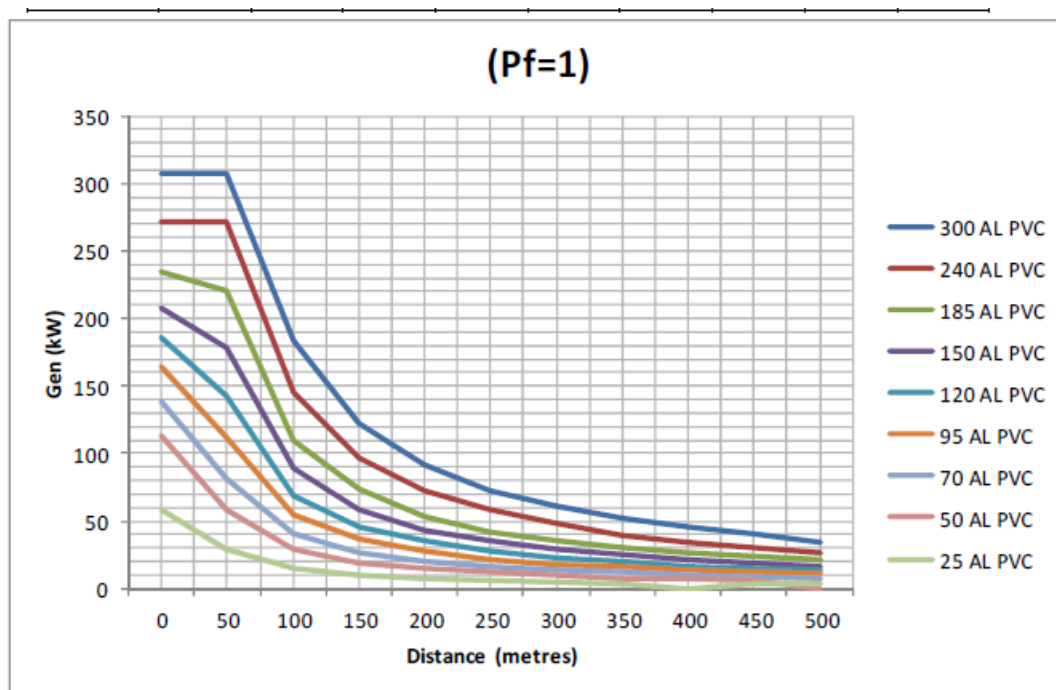


Figure 4 — Dedicated LV feeder maximum generator sizes as a function of aluminium PVC cable size and distance

Table 3 — Look-up values for a dedicated LV feeder maximum generator sizes (kVA) as a function of aluminium (AL) PVC cable size and distance

1	2	3	4	5	6	7	8	9	10
	Sizes mm ²								
	300 AL	240 AL	185 AL	150 AL	120 AL	95 AL	70 AL	50 AL	25 AL
Distance m	Generator sizes kVA								
0	307	271	234	208	186	164	139	113	59
50	307	271	221	179	143	112	81	58	29
100	184	145	110	89	69	55	41	29	15
150	122	97	74	58	46	37	27	19	10
200	92	73	53	43	35	28	20	15	7
250	73	58	42	35	28	22	16	12	6
300	61	48	35	29	23	18	14	10	5
350	52	39	30	25	20	16	12	8	4
400	46	34	26	22	17	14	10	7	3,5
450	41	30	24	19	15	12	9	6	3
500	34	27	21	17	14	11	8	5,5	3