IBC SOLAR BATTERY MATRIX

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QUICK REFERENCE SHEET – PV-STORAGE SIZE ESTIMATE.

Exceptional loads/applications			Household category	Consumption per year	Approximate storage capacity range (min - max)	
			1 adult	1,500 kWh	2 kWh	4 kWh
			2 adults	3,000 kWh	4 kWh	8 kWh
			2 adults 2 children	4,000 kWh	5 kWh	10 kWh
			2 adults 2 children	6,000 kWh	8 kWh	15 kWh
			small factory	15,000 kWh	19 kWh	38 kWh
			small factory	30,000 kWh	38 kWh	75 kWh
		Backup +50%	2 adults	3,000 kWh	6 kWh	11 kWh
		Backup +50%	2 adults 2 children	4,000 kWh	8 kWh	15 kWh
	Heat pump +3,000 kWh		2 adults	6,000 kWh	8 kWh	15 kWh
	Heat pump +3,000 kWh		2 adults 2 children	7,000 kWh	9 kWh	18 kWh
E-car +5,000 kWh			2 adults	8,000 kWh	10 kWh	20 kWh
E-car +5,000 kWh			2 adults 2 children	9,000 kWh	11 kWh	23 kWh
E-car +5,000 kWh	Heat pump +3,000 kWh		2 adults 1 children	11,000 kWh	14 kWh	28 kWh
E-car +5,000 kWh	Heat pump +3,000 kWh		2 adults 2 children	12,000 kWh	15 kWh	30 kWh
E-car +5,000 kWh	Heat pump +3,000 kWh	Backup +50%	2 adults 2 children	16,000 kWh	20 kWh	40 kWh

Please note, that these values are only rough approximations of the necessary storage capacity for theoretic examples and are not sufficient for an optimal system design.

Rule of thumb

$$\frac{\text{Power consumption per year}}{\text{Min.=800 resp. Max.=400}} = \text{Min. resp. max. storage capacity}$$

For example: $\frac{3{,}000\ \text{kWh}}{800} = 3.75 \approx 4\ \text{kWh}$; $\frac{3{,}000\ \text{kWh}}{400} = 7.5 \approx 8\ \text{kWh}$

For backup use +50%

$$\frac{\text{Power consumption per year}}{\text{Min.=800 resp. Max.=400}} \times 1.5 = \text{Min. resp. max. storage capacity}$$

IBC SOLAR lithium battery portfolio 48 V

Manufacturer								BMZ ENERGY STORAGE SYSTEMS			BYD		LG Chem		
Product name								**ESS 7.0**	**ESS 9.0**	**ESS X**	**Battery-Box Pro 13.8**	**Battery-Box LV**	**RESU 6.5**	**RESU 10**	**RESU 13**
Usable capacity [kWh]								5.39	6.8	8.05	13.8	3.5 - 14.0	5.9	8.8	12.4
Cascadable until [kWh]								64.68	81.6	96.6	165.6	42.0	11.8	17.6	24.8
Warranty (remaining capacity)								10 years (60%)			10 years (60%)		10 years (80%)		
Cell chemistry								NMC		NCA	LFP		NMC		
Expandability								1 year			unlimited		yes		
															
SMA	SI 4.4 M	10 years	1~	1	3.3	single phase		> 5.39 kWh	> 6.8 kWh	> 8.05 kWh	> 13.8 kWh	> 3.5 kWh	> 5,9 kWh	> 8.8 kWh	> 12.4 kWh
								> 5.39 kWh	> 6.8 kWh	> 8.05 kWh	> 13.8 kWh	> 14.0 kWh*	–	> 8.8 kWh*	> 12.4 kWh*
			3~	3	9.9	three phase		> 10.78 kWh	> 13.6 kWh	> 16.1 kWh	> 13.8 kWh	> 10.5 kWh	-		
								> 10.78 kWh	> 13.6 kWh	> 16.1 kWh	> 27.6 kWh	> 35.0 kWh*			
	SI 6.0 H		1~	1	4.6	single phase		> 5.39 kWh	> 6.8 kWh	> 8.05 kWh	> 13.8 kWh	> 3.5 kWh			> 12.4 kWh
								> 5.39 kWh	> 6.8 kWh	> 8.05 kWh	> 13.8 kWh	> 21.0 kWh*			> 12.4 kWh*
			3~	3	13.8	three phase		> 16.17 kWh	> 20.4 kWh	> 24.15 kWh	> 13.8 kWh	> 10.5 kWh	-		
								> 16.17 kWh	> 20.4 kWh	> 24.15 kWh	> 41.4 kWh	–			-
	SI 8.0 H		1~	1	6.0	single phase		> 10.78 kWh	> 13.6 kWh	> 16.1 kWh	> 13.8 kWh	> 3.5 kWh			
								> 10.78 kWh	> 13.6 kWh	> 16.1 kWh	> 13.8 kWh	> 24.5 kWh*			
			3~	3	18.0	three phase		> 26.95 kWh	> 34.0 kWh	> 40.25 kWh	> 13.8 kWh	> 10.5 kWh			
								> 26.95 kWh	> 34.0 kWh	> 40.25 kWh	> 41.4 kWh	–			
	Multicluster Box 12.3		3~	up to 12	up to 72	three phase		> 32.34 kWh	> 40.8 kWh	> 48.3 kWh	> 41.4 kWh	–	-		
								> 32.34 kWh	> 40.8 kWh	> 48.3 kWh	> 82.8 kWh	–			
victron energy	Multi Plus-II	5 years (+5)	1~	1	2.4	single phase		> 5.39 kWh	> 6.8 kWh	> 8.05 kWh	> 13.8 kWh	> 3.5 kWh			
								> 5.39 kWh	> 6.8 kWh	> 8.05 kWh	> 13.8 kWh	> 10.5 kWh*			
			3~	3	7.2	three phase		> 10.78 kWh	> 13.6 kWh	> 16.1 kWh	> 13.8 kWh	> 7.0 kWh	-		
								> 10.78 kWh	> 13.6 kWh	> 16.1 kWh	> 27.6 kWh	> 24.5 kWh*			
			1~	2	4.8	single phase		> 5.39 kWh	> 6.8 kWh	> 8.05 kWh	> 13.8 kWh	> 7.0 kWh			
								> 10.78 kWh	> 6.8 kWh	> 8.05 kWh	> 27.6 kWh	> 21.0 kWh*			
			3~	6	14.4	three phase		> 21.56 kWh	> 27.2 kWh	> 32.2 kWh	> 27.6 kWh	> 14.0 kWh			
								> 21.56 kWh	> 27.2 kWh	> 32.2 kWh	> 55.2 kWh	–			
Manufacturer	**Product name**	**Warranty**	**Mains operation**	**Number of inverters**	**Charge/discharge power [kW]**	**Backup**	**Product picture**								

Content of the intersections:

Minimum configuration usable ongrid
Minimum configuration usable backup/offgrid

"– " Combination not possible/no function

* no offgrid approval, only ongrid + backup

Changes to products and services also due to country-specific requirements and deviations from technical data remain reserved. IBC SOLAR shall not be liable for any mistakes or printing errors.

IBC SOLAR lithium battery portfolio high voltage

Manufacturer							LG Chem			BYD	Fronius	BMZ ENERGY STORAGE SYSTEMS
Product name							RESU 7H	RESU 10H	RESU 10M	Battery-Box H	BATTERY	Hyperion
Usable capacity [kWh]							6.6	9.3	9.3	5.1 - 11.52	3.6 - 9.6	7.5 - 15.0
Cascadable until [kWh]							6.6	9.3	9.3	57.6	9.6	45.0
Warranty (remaining capacity)							10 years (60%)			10 years (60%)	2 - 15 years	10 years (60%)
Cell chemistry							NMC			LFP	LFP	NMC/NCA
Expandabillity							–			unlimited	30 month	unlimited
												
SMA	SBS 2.5	10 years	1~	2.5	single phase		6.6 kWh	9.3 kWh	9.3 kWh	5.1 kWh - 10.2 kWh		compatible in the future
							–	–	–	–		
	SBS 3.7			3.7			6.6 kWh - 19.8 kWh	9.3 kWh - 27.9 kWh	9.3 kWh - 27.9 kWh	5.1 kWh - 30.6 kWh	–	7.5 kWh - 45.0 kWh
									–			
	SBS 5.0			5.0								
							6.6 kWh - 19.8 kWh*	9.3 kWh - 27.9 kWh*	–	5.1 kWh - 30.6 kWh*		7.5 kWh - 45.0 kWh*
	SBS 6.0			6.0								
Fronius	Symo Hybrid 3.0-3-S	2 – 20 years	3~	3.0	three phase		6.6 kWh	9.3 kWh	–	6.4 kWh - 11.5 kWh	3.6 kWh - 9.6 kWh	compatible in the future
	Symo Hybrid 4.0-3-S			4.0			–	–		6.4 kWh - 11.5 kWh*	3.6 kWh - 9.6 kWh*	
	Symo Hybrid 5.0-3-S			5.0								
Manufacturer	Product name	Warranty	Mains operation	Charge/discharge power [kW]	Backup	Product picture						

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Minimum configuration usable backup/offgrid

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