Comparison of Lithium battery vs Edison's battery

			Powerwall 2	NiFe 150	NiFe 200	NiFe 250	NiFe 400	NiFe 500	NiFe 1,200
Volts per battery		g cycle life ery has a long cycle life even when the charge/discharge cycle involves 100%	?	1.2	1.2	1.2	1.2	1.2	1.2
Number of batteries		discharge	1	40	40	40	40	40	40
Voltage of bank		9000 9000	?	48	48	48	48	48	48
Ah of battery		0 7000 9 6000	?	150	200	250	400	500	1,200
Watts of battery bank		5 5000 4000	14,000	7,200	9,600	12,000	19,200	24,000	57,600
Watts available		3000 2000	13,500	7,200	9,600	12,000	19,200	24,000	57,600
		1000 0 20 30 40 50 60 70 80 90 100							
Required capacity in watts		Depth of discharge(%) Typical cycle life versus DOD(20°C)	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Depth of discharge Typical cycle life versus DOD(20°C) Bank sizing based on depth of discharge		52%	97%	73%	58%	36%	29%	12%	
			13,500	7,200	9,600	12,000	19,200	24,000	57,600
Unused capacity in watts			6,500 95%	200	2,600	5,000	12,200	17,000	50,600
Efficiency in storing energy	Additional energy required due to poor efficiency in watts			85%	85%	85%	80%	80%	70%
Additional energy required of	due to ¡	ooor efficiency in watts	675	1,080	1,440	1,800	3,840	4,800	17,280
Repeat purchases		2.4 wide operation temperature ni-fe battery can be used at the ambient temperature of -15~+40°C, after charge at the	2	0	0	0	0	0	0
Total number of purchase c	vcles	ambient temperature of 15~30°C	3	1	1	1	1	1	1
Cost per battery	yoloo	100 (%) CG 90 70% Charged	\$8,510	\$120	\$110	\$113	\$160	\$200	\$400
Initial cost		90% Charged	\$8,510			\$4,520	·		•
		50	,		\$4,400	. ,	\$6,400	\$8,000	\$16,000
Expected cycles per purcha		-20 -10 0 10 20 30 40 Temperature(°C) Charging Efficiency As A Function Of Temperature	3,200	1,095	1,278	2,555	5,475	6,023	9,855
Expected cycles for all purc	cnases		9,600	1,095	1,278	2,555	5,475	6,023	9,855
0 1 1111			. -	*	*	45 5 :	Ac -	A	 -
Cost per kWh of solar energ			\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03
Assumes 4.5-peak sun hou	ırs, 25- <u>-</u>	years of operation, 10-kW size, 25% los	ses, total cos	st \$1 / wa	att				
				I	I				
Unused capacity per cycle	kWh		6.5	0.2	2.6	5	12.2	17	50.6
Expected cycles for all purchases			9,600	1,095	1,277.5	2,555	5,475	6,022.5	9,855
Cost per kWh of solar energ	gy		\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03
Cost of unused energy for all cycles			\$2,026	\$7	\$108	\$415	\$2,169	\$3,324	\$16,192
Assumes batteries are topp	ed to 1	00% using only solar energy							
Additional energy required due to battery inefficiencies per cycle kWh			0.675	1.08	1.44	1.8	3.84	4.8	17.28
Expected cycles for all purchases			9,600	1,095	1,277.5	2,555	5,475	6,022.5	9,855
Cost per kWh of solar energy			\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03
Cost of additional energy due to battery inefficiencies for all cycles			\$210	\$38	\$60	\$149	\$683	\$939	\$5,530
Assumes batteries are topp			,	7	7	7	****		**,***
		ee/o deling enly colar energy							
kWh purchased with batter	y bank	contracting only colar chargy	14	7.2	9.6	12	19.2	24	57.6
kWh purchased with batter. Cost of unused energy for a			14 \$2,026	7.2 \$7	9.6 \$108	12 \$415	19.2 \$2,169	24 \$3,324	57.6 \$16,192
Cost of unused energy for a	all cycle								
Cost of unused energy for a	all cycle ue to b	es	\$2,026	\$7	\$108	\$415	\$2,169	\$3,324	\$16,192
Cost of unused energy for a Cost of additional energy decost due to unused energy	all cycle ue to b	es attery inefficiencies for all cycles	\$2,026 \$210 \$160	\$7 \$38 \$6	\$108 \$60 \$17	\$415 \$149 \$47	\$2,169 \$683 \$149	\$3,324 \$939 \$178	\$16,192 \$5,530 \$377
Cost of unused energy for a Cost of additional energy d Cost due to unused energ kWh purchased	all cycle ue to b	es attery inefficiencies for all cycles	\$2,026 \$210 \$160	\$7 \$38 \$6	\$108 \$60 \$17	\$415 \$149 \$47	\$2,169 \$683 \$149	\$3,324 \$939 \$178	\$16,192 \$5,530 \$377 57.6
Cost of unused energy for a Cost of additional energy de Cost due to unused energe kWh purchased Cost of all purchases	all cycle ue to b	es attery inefficiencies for all cycles	\$2,026 \$210 \$160 14 \$25,530	\$7 \$38 \$6 7.2 \$4,800	\$108 \$60 \$17 9.6 \$4,400	\$415 \$149 \$47 12 \$4,520	\$2,169 \$683 \$149 19.2 \$6,400	\$3,324 \$939 \$178 24 \$8,000	\$16,192 \$5,530 \$377 57.6 \$16,000
Cost of unused energy for a Cost of additional energy d Cost due to unused energ kWh purchased	all cycle ue to b	es attery inefficiencies for all cycles	\$2,026 \$210 \$160	\$7 \$38 \$6 7.2 \$4,800	\$108 \$60 \$17	\$415 \$149 \$47	\$2,169 \$683 \$149	\$3,324 \$939 \$178	\$16,192 \$5,530 \$377 57.6
Cost of unused energy for a Cost of additional energy de Cost due to unused energe kWh purchased Cost of all purchases	all cycle ue to b	es attery inefficiencies for all cycles	\$2,026 \$210 \$160 14 \$25,530	\$7 \$38 \$6 7.2 \$4,800	\$108 \$60 \$17 9.6 \$4,400	\$415 \$149 \$47 12 \$4,520	\$2,169 \$683 \$149 19.2 \$6,400	\$3,324 \$939 \$178 24 \$8,000	\$16,192 \$5,530 \$377 57.6 \$16,000
Cost of unused energy for a Cost of additional energy de Cost due to unused energy kWh purchased Cost of all purchases Cost per kWh purchased	all cycle ue to b	es attery inefficiencies for all cycles inefficiencies per kWh purchased	\$2,026 \$210 \$160 14 \$25,530 \$1,824	\$7 \$38 \$6 7.2 \$4,800 \$667	\$108 \$60 \$17 9.6 \$4,400 \$458	\$415 \$149 \$47 12 \$4,520 \$377	\$2,169 \$683 \$149 19.2 \$6,400 \$333	\$3,324 \$939 \$178 24 \$8,000 \$333	\$16,192 \$5,530 \$377 57.6 \$16,000 \$278
Cost of unused energy for a Cost of additional energy de Cost due to unused energy kWh purchased Cost of all purchases Cost per kWh purchased kWh purchased Cost of all purchases + unused	all cycle ue to b gy and	es attery inefficiencies for all cycles inefficiencies per kWh purchased	\$2,026 \$210 \$160 14 \$25,530 \$1,824	\$7 \$38 \$6 7.2 \$4,800 \$667	\$108 \$60 \$17 9.6 \$4,400 \$458	\$415 \$149 \$47 12 \$4,520 \$377	\$2,169 \$683 \$149 19.2 \$6,400 \$333	\$3,324 \$939 \$178 24 \$8,000 \$333	\$16,192 \$5,530 \$377 57.6 \$16,000 \$278
Cost of unused energy for a Cost of additional energy de Cost due to unused energy kWh purchased Cost of all purchases Cost per kWh purchased kWh purchased Cost of all purchases + unused	all cycle ue to b gy and	es attery inefficiencies for all cycles inefficiencies per kWh purchased ergy + inefficiencies	\$2,026 \$210 \$160 14 \$25,530 \$1,824 14 \$27,767	\$7 \$38 \$6 7.2 \$4,800 \$667 7.2 \$4,846	\$108 \$60 \$17 9.6 \$4,400 \$458 9.6 \$4,568	\$415 \$149 \$47 12 \$4,520 \$377 12 \$5,084	\$2,169 \$683 \$149 19.2 \$6,400 \$333 19.2 \$9,252	\$3,324 \$939 \$178 24 \$8,000 \$333 24 \$12,263	\$16,192 \$5,530 \$377 57.6 \$16,000 \$278 57.6 \$37,722
Cost of unused energy for a Cost of additional energy de Cost due to unused energy kWh purchased Cost of all purchases Cost per kWh purchased kWh purchased Cost of all purchases + unused	all cycle ue to b y and used en includi	es attery inefficiencies for all cycles inefficiencies per kWh purchased ergy + inefficiencies ng unused energy & inefficiencies	\$2,026 \$210 \$160 14 \$25,530 \$1,824 14 \$27,767	\$7 \$38 \$6 7.2 \$4,800 \$667 7.2 \$4,846	\$108 \$60 \$17 9.6 \$4,400 \$458 9.6 \$4,568	\$415 \$149 \$47 12 \$4,520 \$377 12 \$5,084 \$424	\$2,169 \$683 \$149 19.2 \$6,400 \$333 19.2 \$9,252	\$3,324 \$939 \$178 24 \$8,000 \$333 24 \$12,263	\$16,192 \$5,530 \$377 57.6 \$16,000 \$278 57.6 \$37,722 \$655
Cost of unused energy for a Cost of additional energy de Cost due to unused energy kWh purchased Cost of all purchases Cost per kWh purchased kWh purchased Cost of all purchases + unused Cost per kWh purchased	all cycle ue to b gy and used en includi	es attery inefficiencies for all cycles inefficiencies per kWh purchased ergy + inefficiencies ng unused energy & inefficiencies	\$2,026 \$210 \$160 14 \$25,530 \$1,824 14 \$27,767 \$1,983	\$7 \$38 \$6 7.2 \$4,800 \$667 7.2 \$4,846 \$673	\$108 \$60 \$17 9.6 \$4,400 \$458 9.6 \$4,568 \$476	\$415 \$149 \$47 12 \$4,520 \$377 12 \$5,084 \$424	\$2,169 \$683 \$149 19.2 \$6,400 \$333 19.2 \$9,252 \$482	\$3,324 \$939 \$178 24 \$8,000 \$333 24 \$12,263 \$511	\$16,192 \$5,530 \$377 57.6 \$16,000 \$278 57.6 \$37,722 \$655
Cost of unused energy for a Cost of additional energy de Cost due to unused energy kWh purchased Cost of all purchases Cost per kWh purchased kWh purchased Cost of all purchases + unused Cost of all purchases + unused Cost of all purchases + unused Expected cycles for all purchases	all cycle ue to b gy and used en includi used en chases	es attery inefficiencies for all cycles inefficiencies per kWh purchased ergy + inefficiencies ng unused energy & inefficiencies	\$2,026 \$210 \$160 14 \$25,530 \$1,824 14 \$27,767 \$1,983	\$7 \$38 \$6 7.2 \$4,800 \$667 7.2 \$4,846 \$673	\$108 \$60 \$17 9.6 \$4,400 \$458 9.6 \$4,568 \$476	\$415 \$149 \$47 12 \$4,520 \$377 12 \$5,084 \$424	\$2,169 \$683 \$149 19.2 \$6,400 \$333 19.2 \$9,252 \$482	\$3,324 \$939 \$178 24 \$8,000 \$333 24 \$12,263 \$511	\$16,192 \$5,530 \$377 57.6 \$16,000 \$278 57.6 \$37,722 \$655
Cost of unused energy for a Cost of additional energy de Cost due to unused energy kWh purchased Cost of all purchases Cost per kWh purchased kWh purchased Cost of all purchases + unused Cost per kWh purchased Cost of all purchases + unused Cost of all purchases for all purchased Cost per cycle including percentages.	all cycle ue to b gy and used en includi used en chases ourchase	es attery inefficiencies for all cycles inefficiencies per kWh purchased ergy + inefficiencies ng unused energy & inefficiencies ergy + inefficiencies ergy + inefficiencies	\$2,026 \$210 \$160 14 \$25,530 \$1,824 14 \$27,767 \$1,983 \$27,767 9,600 \$2.89	\$7 \$38 \$6 7.2 \$4,800 \$667 7.2 \$4,846 \$673 \$4,846 1,095 \$4.43	\$108 \$60 \$17 9.6 \$4,400 \$458 9.6 \$4,568 \$476 \$4,568 \$1,277.5 \$3.58	\$415 \$149 \$47 12 \$4,520 \$377 12 \$5,084 \$424 \$5,084 2,555 \$1.99	\$2,169 \$683 \$149 19.2 \$6,400 \$333 19.2 \$9,252 \$482 \$9,252 \$482	\$3,324 \$939 \$178 24 \$8,000 \$333 24 \$12,263 \$511 \$12,263 6,022.5 \$2.04	\$16,192 \$5,530 \$377 57.6 \$16,000 \$278 57.6 \$37,722 \$655 \$37,722 9,855 \$3.83
Cost of unused energy for a Cost of additional energy de Cost due to unused energy kWh purchased Cost of all purchases Cost per kWh purchased kWh purchased Cost of all purchases + unused Cost per kWh purchased Cost of all purchases + unuse Cost of all purchases + unuse Expected cycles for all purchased Cost per cycle including per Cost of all purchases + unuse Cost of all purchases + unuse Cost per cycle including per Cost of all purchases + unuse	all cycle ue to b gy and used en includi used en chases ourchase	es attery inefficiencies for all cycles inefficiencies per kWh purchased ergy + inefficiencies ng unused energy & inefficiencies ergy + inefficiencies ergy + inefficiencies	\$2,026 \$210 \$160 14 \$25,530 \$1,824 14 \$27,767 \$1,983 \$27,767 9,600 \$2.89	\$7 \$38 \$6 7.2 \$4,800 \$667 7.2 \$4,846 \$673 \$4,846 1,095 \$4.43	\$108 \$60 \$17 9.6 \$4,400 \$458 9.6 \$4,568 \$476 \$4,568 1,277.5 \$3.58	\$415 \$149 \$47 12 \$4,520 \$377 12 \$5,084 \$424 \$5,084 2,555 \$1.99	\$2,169 \$683 \$149 19.2 \$6,400 \$333 19.2 \$9,252 \$482 \$9,252 5,475 \$1.69	\$3,324 \$939 \$178 24 \$8,000 \$333 24 \$12,263 \$511 \$12,263 6,022.5 \$2.04	\$16,192 \$5,530 \$377 57.6 \$16,000 \$278 57.6 \$37,722 \$655 \$37,722 9,855 \$3.83
Cost of unused energy for a Cost of additional energy de Cost due to unused energy kWh purchased Cost of all purchases Cost per kWh purchased kWh purchased Cost of all purchases + unused Cost per cycle including purchases + unused Cost of all purchases + unused	all cycle ue to b gy and used en includi used en chases ourchas	es attery inefficiencies for all cycles inefficiencies per kWh purchased ergy + inefficiencies ng unused energy & inefficiencies ergy + inefficiencies ergy + inefficiencies	\$2,026 \$210 \$160 14 \$25,530 \$1,824 14 \$27,767 \$1,983 \$27,767 9,600 \$2.89 \$27,767 13.5	\$7 \$38 \$6 7.2 \$4,800 \$667 7.2 \$4,846 \$673 \$4,846 1,095 \$4.43	\$108 \$60 \$17 9.6 \$4,400 \$458 9.6 \$4,568 \$4,568 1,277.5 \$3.58 \$4,568 9.6	\$415 \$149 \$47 12 \$4,520 \$377 12 \$5,084 \$424 \$5,084 2,555 \$1.99	\$2,169 \$683 \$149 19.2 \$6,400 \$333 19.2 \$9,252 \$482 \$9,252 5,475 \$1.69 \$9,252 19.2	\$3,324 \$939 \$178 24 \$8,000 \$333 24 \$12,263 \$511 \$12,263 6,022.5 \$2.04	\$16,192 \$5,530 \$377 57.6 \$16,000 \$278 57.6 \$37,722 \$655 \$37,722 9,855 \$3.83 \$37,722 57.6
Cost of unused energy for a Cost of additional energy de Cost due to unused energy kWh purchased Cost of all purchases Cost per kWh purchased kWh purchased Cost of all purchases + unused Cost per kWh purchased Cost of all purchases + unusexpected cycles for all purchases Cost per cycle including percentage Cost of all purchases + unusexpected cycles for all pur	ue to b gy and used en includi used en chases used en	es attery inefficiencies for all cycles inefficiencies per kWh purchased ergy + inefficiencies ng unused energy & inefficiencies ergy + inefficiencies ergy + inefficiencies	\$2,026 \$210 \$160 14 \$25,530 \$1,824 14 \$27,767 \$1,983 \$27,767 9,600 \$2.89	\$7 \$38 \$6 7.2 \$4,800 \$667 7.2 \$4,846 \$673 \$4,846 1,095 \$4.43	\$108 \$60 \$17 9.6 \$4,400 \$458 9.6 \$4,568 \$476 \$4,568 1,277.5 \$3.58	\$415 \$149 \$47 12 \$4,520 \$377 12 \$5,084 \$424 \$5,084 2,555 \$1.99	\$2,169 \$683 \$149 19.2 \$6,400 \$333 19.2 \$9,252 \$482 \$9,252 5,475 \$1.69	\$3,324 \$939 \$178 24 \$8,000 \$333 24 \$12,263 \$511 \$12,263 6,022.5 \$2.04	\$16,192 \$5,530 \$377 57.6 \$16,000 \$278 57.6 \$37,722 \$655 \$37,722 9,855 \$3.83

Prices for NiFe battery cells were obtained here:

hengmingbattery.en.made-in-china.com

Please notice that some prices make no sense per NiFe battery; however, I do not doubt that some of them are approximately correct.

Furthermore, these prices are still missing shipping costs, shipping insurance costs, import taxes, sales taxes, and installation costs.

Battery with retail shops that will import NiFe batteries will be higher.

I have tried to adjust the table based on the NiFe charts for cycles and efficiency.

Tesla Powerwall 2 prices were obtained from Tesla's US website. This includes a Federal tax credit of almost \$3,000, and it includes installation expenses of the Powerwall 2 and a Gateway. Without the tax credit the total cost would be \$11,500. In reality, I doubt a buyer of the Powerwall would buy it without a Gateway or the installation for both devices.