



Energy Toolbase – CPS ENERGY STORAGE INTEGRATION Resource Guide

July 2020 Version 1.1

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Overview CPS ESS Integration on Energy Toolbase

Energy Toolbase has integrated Chint Power Systems (CPS) Commercial Energy Storage System (ESS) solutions onto the Energy Toolbase (ETB) Platform. This integration enables ETB users to run energy storage dispatch simulations and savings analysis that are representative of how CPS ESS products controlled by the Energy Toolbase iEMS controller would operate in the field.



CPS 125kW/268kWh

CPS has introduced its next generation, turn-key commercial energy storage system (ESS) solution that begins with a building block of 62.5 kW / 268kWh and can be expanded upwards. CPS's ESS is paired with Energy Toolbase's Intelligent Energy Management System (iEMS) storage control software, providing a turnkey solution for solar + storage developers. The CPS system is contained in a pre-engineered, NEM 3R, UL9540A certified pending for plug and play operation. The system comes standard with a 10-year, full wrap warranty on all components: battery, inverter, enclosure, and all electronics. The CPS system comes standard with pre-factory testing prior to shipping and includes on site commissioning.

Energy Toolbase has worked with CPS to validate the ESS hardware specifications which have been pre-loaded onto the ETB platform. This allows users to quickly evaluate their standalone-ESS projects or PV+ESS projects, on any of Energy Toolbase's 60,000+ utility rate schedules. The CPS integration streamlines the project development workflow for commercial storage developers and gives them confidence to know they are running validated savings and economic analysis.



Energy Toolbase iEMS

The CPS Energy Storage System utilizes Energy Toolbase's iEMS (Intelligent Energy Management System) control software. This enables users to run CPS commercial storage dispatch simulations and savings analysis that are representative of how the CPS products, controlled by iEMS, would operate in the field. Energy Toolbase's iEMS controls software utilizes artificial intelligence and advanced machine learning to forecast and optimally discharge energy storage systems operating in the field.



iEMS enables developers to maximize the value of their storage asset:

- **Operating Modes.** Demand management, TOU arbitrage, PV self-consumption, and more.
- **Optimized.** Capture all available value streams in order of importance to maximize savings.
- Experience. 4+ years of operating history and R&D training our machine learning models.
- **Re-forecasting.** Ingests real-time data to recreate forecasts every 15 minutes.
- Standards. Supports all industry standard communication protocols.
- **Compliance.** OEM warranty and incentive program (e.g., ITC, SGIP) compliant operations.
- **Performance Guarantee.** Backed by an industry leading performance guarantee.

View the iEMS data sheet



Signing Up CPS Commercial ESS Integration

There is no cost for Energy Toolbase users to use the CPS Commercial Energy Storage integration on the Energy Toolbase platform. There is a dual opt-in process, meaning ETB accounts must first apply to use the service, and then CPS must grant access.

Applying for Access to CPS Integration:

- In 'Step 5 Energy Storage' users will initially see a greyed-out CPS logo. Click to apply for access.
- (2) The pop-up window summarizes CPS's commercial ESS offering on ETB. Note: when using the CPS ESS Integration on ETB, users are consenting to share proposal information with CPS, this does not include personally identifiable customer information. Click 'I Accept' to apply.
- (3) CPS requires ESS developers to be approved prior to granting access to the integration. Approved users will receive the latest updates on CPS hardware, as well as personalized support on their projects.



(4) CPS will review applications and grant access accordingly. Approved users can expect to receive an email notification from both CPS and ETB when access is granted.



Using CPS ESS Integration

Once an ETB account is permissioned to access the CPS ESS Integration, the CPS logo will appear green in step 5. Both the CPS 'ESS Designs' and Energy Toolbase iEMS 'ESS Control Settings' have been pre-configured so that users can quickly run validated CPS ESS dispatch simulations and savings analysis.

CPS ESS Designs:

These are the newest generation of CPS ESS solutions. Note: these will be periodically updated as new energy storage system configurations are launched.

CPS – ESS 62.5kW / 268kWh	CPS – ESS 375kW / 804kWh
CPS – ESS 125kW / 268kWh	CPS – ESS 375kW / 1,608kWh
CPS – ESS 125kW / 536kWh	CPS – ESS 500kW / 1,072kWh
CPS – ESS 250kW / 1,072kWh	CPS – ESS 500kW / 2,144kWh

Using CPS ESS Integration:

- (1) **System Cost:** specify the all-in, total turnkey installed ESS cost, inclusive of all hardware, software, developer fees, EPC costs, labor, overhead and profit. *Note: the default suggested cost is set initially based on the ETB user's simple ESS costing in their 'Company Settings'*.
- (2) End of Life Treatment: specify whether to replace the CPS ESS and associated costs at end of life. *Note: the transaction will determine if the replacement cost is reflected in the cash flow, which we will detail in the next section of this guide.*



TEP 2 Configure your CPS America	a System
General Info	
End of Life Treatment	 Replace the ESS and include associated costs in analysis
	O Do not replace the ESS, any savings from the ESS will stop
System Cost	\$331,808 - \$1,276 / kWh
System Cost	\$331,808 - \$1,276 / kWh



- (3) **ESS Design:** select the CPS validated 'ESS Design' from the drop-down menu list. Note: CPS will periodically update these so ETB users can assume these are always up-to-date.
- (4) ESS Control Setting: select the ETB iEMS control strategy from the drop-down list. Note: "ETB iEMS (ESS must charge from PV)" assumes the CPS ESS is being paired with PV, and enforces a PV charging-only requirement in order for the ESS to be eligible for the Federal (ITC) Investment Tax Credit.

ETB Optimizer:

Energy Toolbase users can utilize the 'ETB Optimizer' feature, within the CPS ESS integration to simulate the performance and savings of (10) different CPS ESS system sizes at once, based on the selected Energy Toolbase iEMS control logic.

ESS Detail Summary:

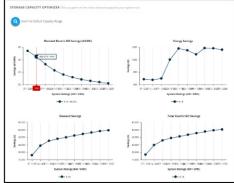
Once the iEMS enabled CPS simulation has run, users will see the ESS Details performance summary, which displays the following values, based on the simulation performed:

Max Discharge Power: rated kW of the ESS Annual Equivalent Full Battery Cycles: # of cycles Annual Energy Discharged: kWh discharged from the ESS Annual System Losses: kWh loss from ESS Blended Savings per kWh: savings from ESS, displayed in \$/kWh of ESS capacity

Total Energy Capacity: rated kWh of the ESS

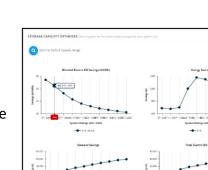
System Details * ESS Design * Design Quantity CPS-ESS-30-65-GRID V1.1 * ESS Control Setting CPS-ESS-30-130-GRID V1.1 PS-ESS-60-130-GRID V1.1

System Details		
* ESS Design	CPS-ESS-120-520-GRID V1.1	~
* Design Quantity	1	
* ESS Control Setting		Ŷ
	iEMS v1.0 - (No Charge Restriction)	
	iEMS v1.0 - (Charge Solar Only)	



General Info		
System Cost:	\$138,526	
Simulation Type:	Service Provider	
ESS Type:	Detailed	
End of Life Treatment:	Replace	
Equipment Info		
Service Provider:	CPS America	
Manufacturer / Model:	(1) CPS-ESS-120-52	20-GRID V1.1
Performance Info		
Total Energy Capacity:	520) kWh
Max Discharge Power:	120) kW
Annual Equivalent Full B	attery Cycles: 172	2
Annual Energy Discharg	ed: 84,7	799 kWh
Annual System Losses:	(8,9	95) kWh
Blended Savings per kW	'h: \$38	/ kWh





ETB Analytics:

The 'ETB Analytics' feature enables users to view a project summary with detailed information of the iEMS enabled CPS ESS dispatch simulation and corresponding utility bill savings of the project.

'Monthly Electricity Costs' – users can view a 12month summary view of: energy (kWh), demand (kW), and utility bill cost information both pre & post: PV & ESS. Note: selecting the 'Show Advanced *Options' hyperlink unlocks additional display* options.

'Demand Profile Visualization' – an interactive charting environment that allows users to visualize interval data, including usage data, solar PV data, ESS charge/discharge data, and net usage data. The charting element across the bottom displays the energy & demand costs of the selected utility rate schedule(s).

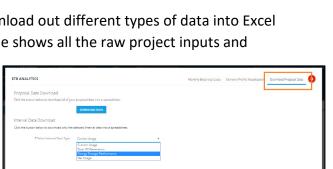
'Download Proposal Data' tab – allows users to download out different types of data into Excel (.csv) formatted files. The Proposal Data Download file shows all the raw project inputs and

calculated values. The Interval Data Download exports 365-days of 15-minute interval data for Current Usage, PV Generation, ESS Performance, and Net Usage in a multi-column format.

ETB ANALYTICS			Monthly Bectricity Costs	Demand Profile Visualization	Download Proposal Data
Proposal Data Download					
Click the lastor below to described all of you	e proposal data into a spreash-beat.				
	DOWNLOAD DATA				
Interval Data Download					
Click the button below to download only the	selected interval data into a spreadsheet.				
 Select Interval Data Type 	Current Usage				
	Current Usege				
	Solar PV Generation				
	Energy Storage Performance				
	Net Usege	1. I.			







	California Ita	citty						Manth	Ny Bectricity Co.	its Bernand Pro	ella Voualizat	ion Download Proj	posal Data 🦉
Jtllty Rates An	nd Charges	5			Display C	options				Display Det	alls		
Rate Schedule For		E-19				ergy/Demand ins To Display		Use Before PV/	155	Dapley Deep	p/Demand OU Desails	Energy Use Before	
	C	C-19					Soler P					Demand Before	PV/ESS
elect Charges To D	Display	Current Ch	erges Defore	PV/ESS				Use After PV & 5	Before ESS		ley Energy	Energy Use Befa	me PV/ESS
		New Chara	es After PV &	Before ESS			Crew Crew	Storage			ort/Export		
		New Charg	es After PV/CS	15			C freezy	Use After PWES	3	Display Detaile	d Charges	Charges After PV	4/20
	н	ide Advenced	Options				✓ Demar	d Before PV/ESS					
							Demer	nd After PV & Bel	fore ESS				
							Demar	id After PVIESS					
Dil De	ne Ranges		0	inergy Use (kill)	10	M	ex Demend (ki	(//			Charges		
	ce Ranges End Date	Seeson	On Peak	Part Peak	0 Off Peak	M NC/Max	ex Demend (ki On Peak	W) Pavt Peak	Other	NEC	Charges Energy	Demand	Total
Start Date		Seeson W							Other 5611	NBC \$1,807		Demand	Total \$20,011
Start Date 1/1/2019	End Date		On Peak	Part Peak	OffPeak	NC/Max	On Peak	Part Peak			Energy	Demand	
Start Date 1/1/2019 2/1/2019	End Date 2/1/2019	w	On Peak	Рат: Реак 95,225	Off Peak 54,774	NC7Max 465	On Peak	Part Peak 465	\$611	\$1,807	Energy \$10,958	Demand \$5,635	\$20,011
Start Date 1/1/2019 2/1/2019 3/1/2018	End Date 2/1/2019 3/1/2019	w w	On Peak	Part Peak 95,226 95,476	Off Peak 54,774 54,524	NC7Max 465 517	On Peak	Part Peak 465 517	\$611 \$552	\$1,807 \$1,665	Energy \$10,958 \$9,942	Demand \$6,635 \$7,317	\$20,011 \$19,475
Start Date 1/1/2019 2/1/2019 3/1/2018 4/1/2018	End Date 2/1/2019 3/1/2019 4/1/2018	W W W	On Pesk - -	Part Peak 95,225 95,475 95,887	Off Peak 54,774 54,524 54,113	NC / Max 465 517 439	On Peak	Pert Peak 465 517 439	\$611 \$552 \$611	\$1,807 \$1,605 \$1,389	Energy \$10,958 \$0,942 \$7,954	Demand \$6,635 \$7,317 \$5,953	\$20,011 \$19,475 \$15,917
Start Date 1/1/2019 2/1/2019 3/1/2018 4/1/2018 5/1/2018	End Dete 2/1/2019 3/1/2019 4/1/2018 5/1/2018	W W W	On Peak - - -	Part Peak 95,226 95,476 95,887 96,885	Off Peak 54,774 54,524 54,113 53,014	NC / Max 465 517 439 417	On Peak - - -	Part Peak 465 517 439 417	\$611 \$552 \$611 \$591	\$1,807 \$1,665 \$1,389 \$1,222	Energy \$10,958 \$8,942 \$7,954 \$6,748	Demand 96,635 97,317 95,953 95,308	\$20,011 \$19,475 \$15,917 \$13,869
Start: Date 1/1/2019 2/1/2019 3/1/2018 4/1/2018 5/1/2018 6/1/2018	End Date 2/1/2019 3/1/2019 4/1/2018 5/1/2018 6/1/2018	W W W W	On Peak - - - - 47,422	Part Peak 95,225 95,476 95,887 96,985 40,214	Off Peak 54,524 54,113 53,014 13,364	NC / Max 465 517 439 417 401	On Peak - - - 401	Part Peak 465 517 439 417 386	\$611 \$552 \$611 \$591 \$611	\$1,807 \$1,605 \$1,389 \$1,222 \$1,094	Energy \$10,958 \$9,942 \$7,954 \$6,748 \$5,926	Demand \$6,635 \$7,317 \$5,953 \$5,368 \$8,609	\$20,011 \$19,475 \$15,917 \$13,869 \$16,251
Start Date 1/1/2019 2/1/2019 3/1/2018 4/1/2018 5/1/2018 6/1/2018 7/1/2018	End Date 2/1/2019 3/1/2019 4/1/2018 5/1/2018 6/1/2018 7/1/2018	W W W S S	On Peek	Part Peak 95,226 95,476 95,887 96,986 40,214 46,296	Off Peek 54,774 54,524 54,113 53,014 53,364 59,678	NC / Max 465 517 439 417 401 379	On Peak - - - - 401 370	Part Peak 465 517 439 417 100 378	\$611 \$552 \$611 \$591 \$011 \$591	\$1,807 \$1,665 \$1,389 \$1,222 \$1,094 \$3,101	Energy \$10,958 \$9,942 \$7,954 \$4,748 \$3,926 \$5,927	Demand \$4,635 \$7,317 \$5,953 \$3,368 \$4,619 \$9,800	\$20,011 \$19,475 \$15,917 \$13,809 \$16,251 \$17,489
Start Date 1/1/2019 2/1/2019 3/1/2018 4/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018	End Date 2/1/2019 3/1/2019 4/1/2018 5/1/2018 6/1/2018 7/1/2018 8/1/2018	W W W S S S S	On Peak	Part Paak 95,225 95,475 95,887 96,985 40,214 46,285 45,487	Off Peak 54,774 54,524 54,113 53,014 53,364 59,678 61,562	NC / Max 465 517 439 417 401 379 360	On Peak	Part Peak 465 517 439 417 300 378 300	\$611 \$552 \$611 \$591 \$611 \$591 \$591 \$611	\$1,807 \$1,965 \$1,389 \$1,222 \$1,094 \$3,101 \$3,100	Energy \$10,958 \$8,912 \$7,954 \$6,748 \$5,026 \$5,027 \$3,401	Demand 96,635 97,317 95,953 93,308 98,619 99,800 98,800 98,800	\$20,011 \$19,475 \$15,917 \$13,800 \$16,251 \$17,480 \$16,002
Stort Date 1/1/2019 2/1/2019 3/1/2018 4/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018	End Date 2/1/2019 3/1/2019 4/1/2018 5/1/2018 6/1/2018 8/1/2018 8/1/2018 8/1/2018	W W W S S S S S	On Peak	Part Peak 95,225 95,475 95,887 94,985 40,214 46,285 45,487 48,091	Off Peak 54,774 54,524 54,113 53,014 53,364 53,364 53,364 61,562 56,597	NC / Max 465 517 439 417 401 379 360 355	On Peak - - - 401 379 354 347	Part Pask 465 517 439 417 505 505 800 805	\$611 \$552 \$611 \$591 \$611 \$591 \$611 \$611	\$1,807 \$1,905 \$1,389 \$1,222 \$1,094 \$3,101 \$3,100 \$3,188	Energy \$10,958 \$0,942 \$7,954 \$0,748 \$3,026 \$5,097 \$3,461 \$0,880	Demand \$6,635 \$7,317 \$5,953 \$3,308 \$8,619 \$9,800 \$8,800 \$8,800 \$8,800 \$2,984	\$20,011 \$19,475 \$15,917 \$13,809 \$16,251 \$17,489 \$16,052 \$16,062 \$16,064
Stert Date International 1/1/2019 2/1/2019 2/1/2019 3/1/2018 3/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018 5/1/2018	End Date 2/1/2019 3/1/2019 4/1/2018 5/1/2018 6/1/2018 8/1/2018 8/1/2018 9/1/2018 10/1/2018	W W W S S S S S S	On Peek	Part Paak 95,225 95,475 95,887 96,985 40,214 46,285 45,487 45,487 48,091 45,625	Off Peak 54,774 54,524 54,113 53,014 53,364 59,678 61,562 56,507 61,381	NC / Max 465 517 439 417 401 379 360 855 368	On Peak - - - 401 370 354 347 388	Part Pask 465 517 439 417 Mt6 878 800 855 808	\$611 \$552 \$611 \$591 \$611 \$591 \$611 \$611 \$611 \$591	\$1,807 \$1,665 \$1,389 \$1,222 \$1,004 \$1,101 \$1,100 \$1,128 \$1,128 \$1,385	Energy \$10,958 \$0,952 \$7,954 \$1,954 \$1,954 \$1,026 \$5,007 \$5,401 \$0,880 \$7,071	Demend \$4,633 \$7,317 \$5,993 \$3,508 \$4,619 \$9,800 \$4,650 \$4,850 \$4,850 \$4,850 \$4,850 \$4,850 \$4,850 \$4,850 \$4,850 \$4,850 \$4,850 \$4,850 \$4,855	\$20,011 \$19,475 \$15,917 \$13,869 \$16,251 \$17,489 \$16,062 \$16,064 \$28,028

Transactions When Using the CPS ESS Integration

Energy Toolbase has created a special transaction template that is designed to be used with the CPS ESS Integration. The transaction has the iEMS renewal fee pre-configured, so it will dynamically auto-calculate based on the selected size of the CPS energy storage system. The transaction is entitled: **"ETB iEMS – Cash Purchase".**

Specifying Project Cost:

As noted in the previous section, when using the CPS ESS Integration, users should specify the all-in, total turnkey installed ESS cost, which is inclusive of all hardware, EMS software, developer fees, EPC costs, labor, overhead and profit. Note: this is advantageous for tax purposes as it allows users to have a higher tax basis when claiming the Federal (ITC) Investment Tax Credit and any Depreciation benefit.

'Equipment Replacement' Cost:

By default, the "ETB iEMS – Cash Purchase" transaction includes a cash flow for Equipment Replacement. Therefore, it is important that users intentionally set their CPS ESS Hardware -Equipment Replacement costing estimate in their company settings, as this flows into the financial analysis. This applies when users select 'Replace ESS and include associated costs' for their project in Step 5.

The CPS 'Replacement Cost' is initially defaulted based on how users have defined their 'Simple Battery Replacement \$/kWh' cost in their company settings.

When setting your CPS Replacement Cost, only include your estimate for ESS Hardware, as the iEMS control software replacement cost, which renews at year 11, is already dynamically calculated in the transaction, and has its own dedicated cash flow column as shown below. The iEMS replacement cost value is based on ESS kWh capacity.



Sample: "ETB iEMS – Cash Purchase" cash flow table:

nputs a	nd Key Fin	ancial Metrics							
Total Proje	ct Costs	\$360,000	20-Year R	DI	1	61.9% Elec	tricity Escalation	Rate	3%
20-Year IRi	R	14.77%	PV Degrad	lation Rate	0.	.8% Fede	eral Income Tax F	Rate	30%
20-Year NF	V	\$257,687	Discount F	Rate	5	% Stat	e Income Tax Rat	e	8%
Payback Pe	eriod	5.8 Years							
Years	Project Costs	O&M & Equipment Replacement	iEMS License Renewal	SGIP Incentive	Electric Bill Savings	Change in State Tax Liability	Change in Federal Tax Liability	Total Cash Flow	Cumulative Cash Flow
Upfront	-\$360,000	-	-	\$6,930	-	-		-\$353,070	-\$353,070
1	-	-	-	\$3,707	\$36,716	\$5,760	\$93,600	\$139,783	-\$213,287
2	-	-	-	\$3,223	\$37,357	\$9,216	-	\$49,797	-\$163,490
3	-	-	-	-	\$38,004	\$5,530	-	\$43,533	-\$119,957
4	-	-	-	-	\$38,655	\$3,318	-	\$41,973	-\$77,984
5	-	-	-	-	\$39,312	\$3,318	-	\$42,630	-\$35,354
6	-	-	-	-	\$39,973	\$1,659	-	\$41,632	\$6,278
7	-	-	-	-	\$40,639	-	-	\$40,639	\$46,917
8	-	-		-	\$41,308	-	-	\$41,308	\$88,225
9	-	-	-	-	\$41,981	-	-	\$41,981	\$130,206
10	-	-	-	-	\$42,657	-	-	\$42,657	\$172,863
11	-	-\$1,000	-\$12,000	-	\$43,336	-	-	\$30,336	\$203,199
12	-	-\$1,000	-	-	\$44,017	-	-	\$43,017	\$246,216
13	-	-\$1,000	-	-	\$44,701	-	-	\$43,701	\$289,917
14	-	-\$1,000	-	-	\$45,385	-	-	\$44,385	\$334,302
15	-	-\$1,000	-	-	\$46,071	-	-	\$45,071	\$379,373
16	-	-\$76,000	-	-	\$52,726	-	-	-\$23,274	\$356,099
17	-	-\$1,000	-	-	\$53,591	-	-	\$52,591	\$408,690
18	-	-\$1,000	-	-	\$54,460	-	-	\$53,460	\$462,150
19	-	-\$1,000	-	-	\$55,333	-	-	\$54,333	\$516,483
20	-	-\$1,000	-	-	\$56,209	-	-	\$55,209	\$571,691
Totals:	-\$360.000	-\$85.000	\$0	\$13.860	\$892.431	\$28.800	\$93.600	\$571.691	

Editing CPS 'Replacement Cost' go to 'Company Settings' > 'Energy Storage Settings' tab > 'CPS America' > click on individual 'detailed ESS system design' > to redefine those values.

Note: be mindful of how the PV inverter 'replacement cost' is defined in 'company settings', as that value will also pull into the financial model when modeling PV+ESS projects.

Company Solar PA'Settings Energy Storage 1	Settings Proposal inputs 2 nd Party	Services Users & Reymetric			
SIMPLE ENERGY STORAGE SETTINGS					Billedes isset
Material Costs	Miss	info			
Ballery Basis Sciville Scivil		y the Spanic 15 Years			
Battery Replacement 5-8x87 5400	same	y install kate Hro kwhr 🛛 🕹 S			
DETAILED ENERGY STORAGE SYSTEM DESIG	ins		user befined b	esigns Aws sten uns	amenca esta commercial solaria
DETAILED ENERGY STORAGE SYSTEM DESIG	SNS investor Type	Energy Capacity (10%)	user befined b Mas Dishcharge Power (493)	esigns AWS Ster Urs Tetal Cent	initial Time (Hours)
Manufacturer / Model		Energy Capacity (HBhs		_	
Manufazharer / Model	investion Type		Mas Dishcharge Power (607)	Total Cost	Install Time (Hours)
Manufasturer / Model CPG PS 36:65:643-07:62(resentitionel) CPS-825-9546-6402-07:1	investion Type	15	Mas Dishcharge Powar (00) 35	Total Cost şra,14a	Install Time (Hours)
Macufacturer / Model (PSIPSI 16.65.680 v) ///incontinuets	investion Type invegrated incograted	45 85	Mas Dishcharge Power (00) 35 70	Total Cont Sri, 144 Soc.120	Install Time (Hours) 22.7 44.3
Manufastarer / Model CPS INS 76.67.6812 (2.6) CPS-Model-2012 (2.7) CPS-PS-504-95-2012 (2.1) CPS-PS-504-152-0815 (2.6) Discontinue()	investing Type integrated integrated integrated	45 80 150	Mas Diebsbarge Power (603) 35 30 30	Total Dox projek Sobito projek	Install Time (Hours) 44.3 27
Manufacturer / Model CHCPS 50.67.5819 (II.67540000004) CH2452-0494-0402 (II.1 CH2452-0494-0402 (II.1 CH2452-04135 (III.1) (I.2)000000000000000000000000000000000000	Invention Type Integrated Integrated Integrated Integrated	45 95 158 199	Max Sishcharge Power (x0) 35 20 30 20	Tetal Det \$64,148 \$60,725 \$106,766 \$106,766	Install Tens (Hours) 44.1 44.2 22 22



CPS ESS Life Span & Degradation:

CPS has set the ESS Battery Life Span at 10 years, and Battery Degradation Rate at 3%. Approved ETB uses can view the 'CPS ESS System Design' characteristics in their company settings. Please contact your CPS sales representative for additional details.

Term (Years) of the Transaction:

For this default Transaction, ETB has fixed the Transaction Term to 20 years. If a user prefers to model and present a different transaction term, you can simply copy/duplicate the Transaction and custom configure the term in the 'transaction details' section like any other Transaction.

As shown in the sample cash flow table on the preceding page, the Energy Toolbase iEMS license renews at year 11, and the CPS energy storage system is replaced at year 11 also.

Including other ESS Monetary Value Streams:

Users can elect to further customize their Financial Transaction template(s) to include additional cash flows, to account for additional value streams in their financial analysis. Cash flows can be structured as either a one-time payment or as an annual recurring payment.

One example of a recurring value stream could a Grid Services program, where the CPS ESS captures value by providing a benefit to the utility or independent system operator. An example of a one-time value stream could be the Resiliency value that a CPS ESS provides for a specific customer, by providing back-up power in the event of a grid outage and eliminating the need for a generator.

Creating other Transaction Types:

Users can easily configure other Transaction types (e.g., Loan, Lease, PPA) by copy/duplicating the existing ETB iEMS transaction template. We encourage you to contact your ETB account manager for assistance on this.



Final Checklist

We have compiled a final checklist of items for users to ensure that they are accurately modeling and optimizing the project economics of CPS ESS projects for their customers.

Final Checklist Items:

- 1. **ESS System Price** doublecheck to confirm that your 'System Cost' in Step 5 represents the all-in, total turnkey installed cost of the ESS System.
- 2. **Transaction** make sure to utilize the 'ETB iEMS Cash Purchase' transaction template, which dynamically calculates the EMS renewal fee. Contact your ETB account manager if you want to create different variations of the transaction, like a Loan, Lease or PPA.
- 3. Equipment Replacement Cost make sure you define the CPS ESS Hardware 'Equipment Replacement Cost' in 'Company Settings', which will flow into your cash flow statement and project economics when you elect to 'Replace the ESS' for the 'End of Life Treatment'.
- 4. Utility Rate Schedule select the most advantageous, eligible utility rate schedule option for post-ESS or post-PV+ESS savings.
- 5. **Demand Throttle** verify the demand reduction throttle in 'Step 2' is set to 100% to capture the full demand charge management savings opportunity from both PV & ESS.
- 6. **Incentives** in 'Step 3' be sure to select all eligible ESS incentives for the project, based on the customer's eligibility (i.e. SGIP, SMART, Federal ITC, Depreciation, etc.).

Contact your Energy Toolbase Account Manager to discuss any of these items in more detail.

