

C&I ESS Introduction



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01

C&I Products

Air Cooling Pi Station 186

Pytes



Pytes

Liquid Cooling Pi Station 230



Liquid Cooling Pi Station 230

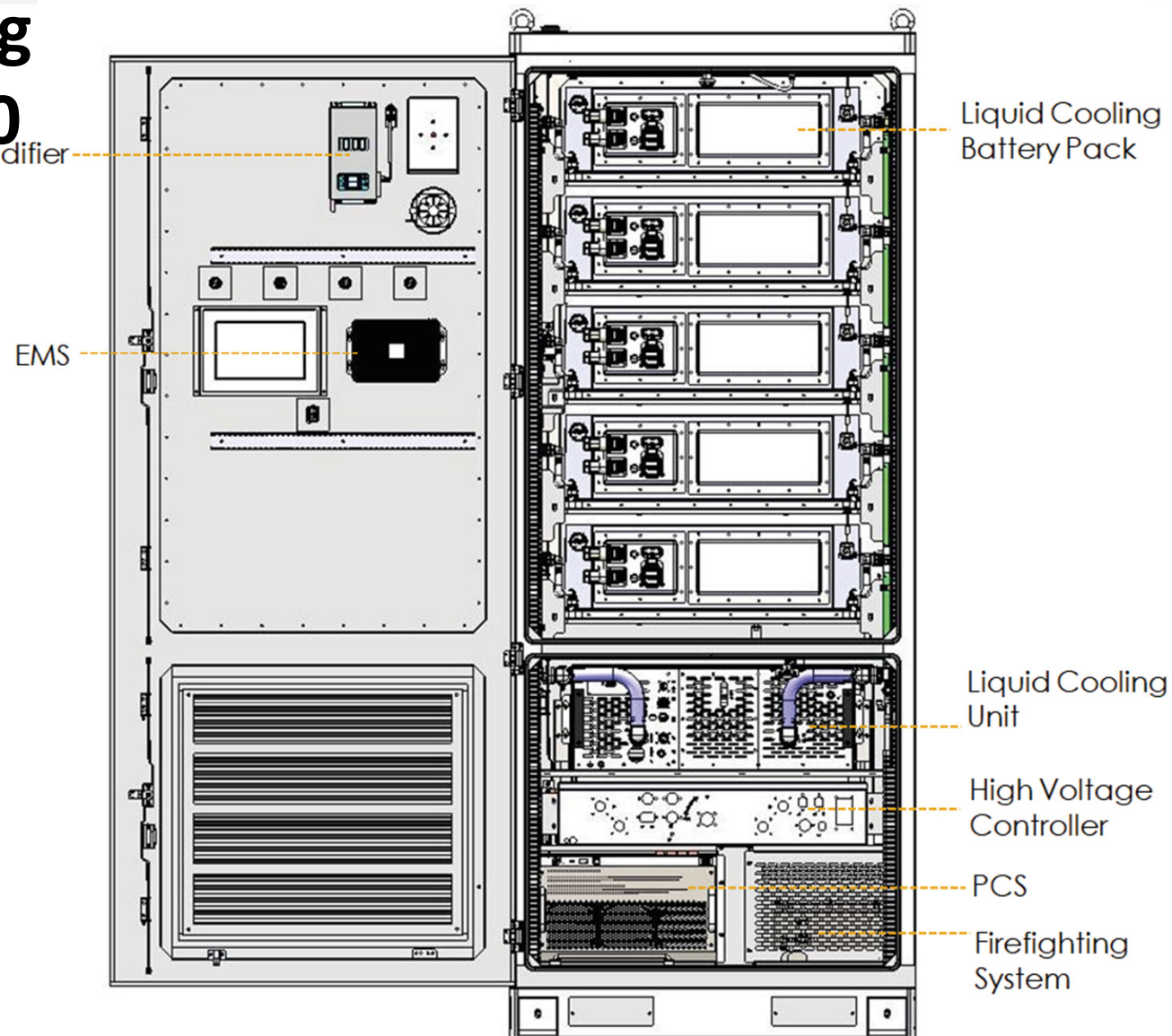
Pytes



Mode	PI STATION 230
System Specification	
Battery Chemistry	LFP (LiFePO ₄)
Nominal Output Power	100KW
Battery Capacity	230kWh
Battery Nominal Voltage	832V
Operating DC Voltage Range	728V-936V (3P4W)
Recommended Charging/Discharging Current	140 ^[1]
Fire Fighting System	Sensor tube, with the agent of NOVEC 1230 or FM200 or water
Cycle life	4500 ^[2]
DOD	100%
Warranty	3 Year Product Warranty, 10 Year Battery Warranty
Communication	
Communication port	CAN, RS485, Ethernet
Communication protocol	ModbusRTU/TCP
Mechanical	
Dimensions(W*D*H)	960*1440*2400mm
Weight	3000kg
Cooling System	Liquid cooling
IP protection	IP54
Environmental	
Reactive Humidity	0-95% (no condensing)
Operating Temperature Range	Charge:0~55°C; Discharge:-20~55°C
Altitude	2000m (>2000 derating)
Regulations	
Certification	CELL:UN38.3, IEC62619/UL1973/UL9540A/GBT36276, RoSH PCS: GB/T34120-2017, GB/T34133-2017 Module UN Transportation Test Standard:UN38.3
^[1] Charge and discharge current derating will occur between -20°C and 0°C ^[2] Under test conditions(25±3°C,0.5PEOL80%)	

Liquid Cooling Pi Station 230

Pytes



Safety:

1. Fire fighting system
2. Three level of BMS control
3. Multi means of protection

Capacity:

1. Grade A cells from TIRE 1 cell supplier
2. Capacity 215kwh
3. Scalable

Profitable:

High IRR

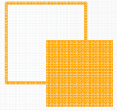
Smart:

1. Smart EMS
2. Remote control & Cloud
3. Able to link to other platform

Multi function:

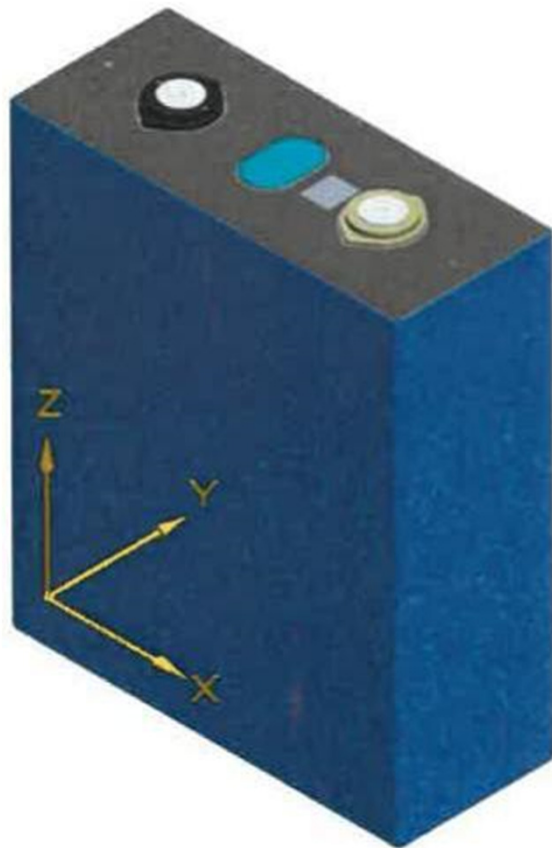
1. On/off Grid
2. Smart working mode

Flexible to invest



CELL Certification

Pytes



UL1973、UL9540A、IEC 62619、
UN38.3、GB/T 36276



GBT31485



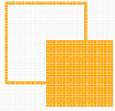
IEC62619



UN38.3



UL1973



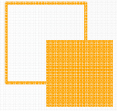
PACK

Pytes

Liquid cooling pack

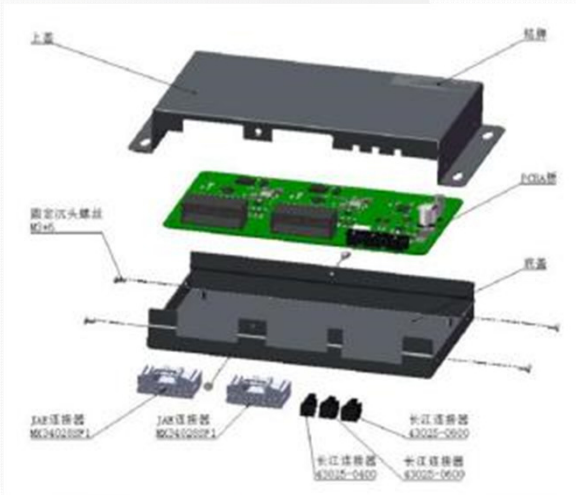


项目 Item	规格 Specifications	备注 Remark
标称电压 Nominal voltage	166.4V DC	单体电压 3.2V Cell voltage 3.2 V
工作电压范围 Operating voltage range	130~189.8 DC	单体电压范围 2.5~3.65V Cell voltage range 2.5~3.65V
标称容量 Nominal capacity	280Ah	0.5C , 25℃
标称电量 Nominal energy	46.592kWh	0.5C , 25℃
串并联配置 Configuration	1P52S	4 个模组串联 4 battery module in series
额定充电电流 Rated charge current	140A	
峰值充电电流 Maximum charge current	170A	持续 60s Lasts 60s
额定放电电流 Rated discharge current	140A	
峰值放电电流 Maximum discharge current	170A	持续 60s Lasts 60s



BMS

Pytes

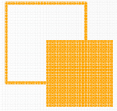


BMS

Central control unit of battery cluster

Three-level control

Protect battery module and optimize battery life



PCS For Pi Station 233

Pytes

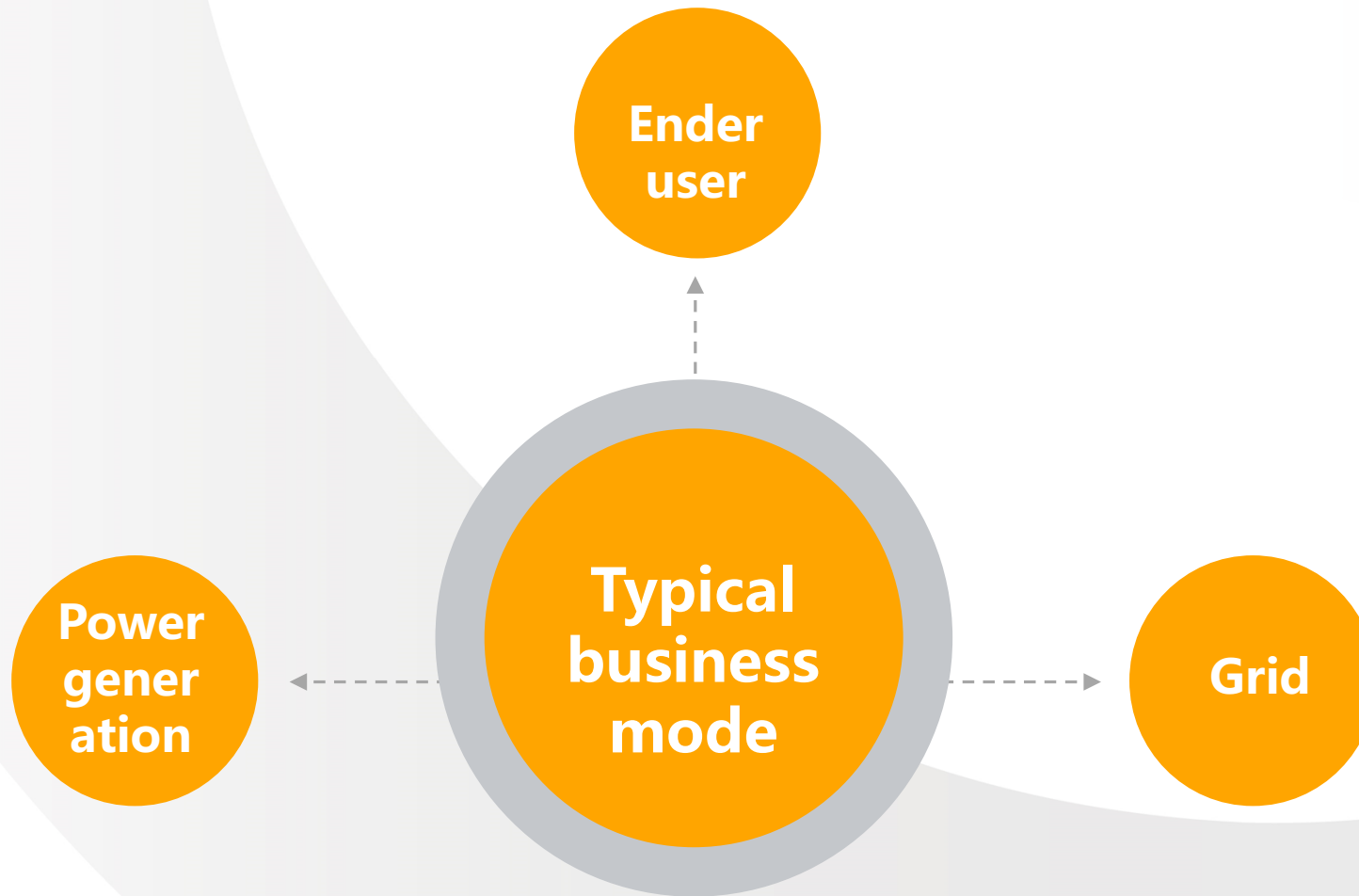


Spec		105kW
DC Parameter		
Full Load （V）	615~950 （ 3W+PE） /680~950 （ 3W+N+PE）	
Input	1	
Max Current （A）	170	
AC （on grid/ off grid optional）		
Voltage （V）	230/400	
Voltage deviation	- 10%~+15%	
AC out put	（3W+PE） / （ 3W+N+PE）	
Rated Power （kW）	105	
Max output Power （kW）	116	
Max Current （A）	167	
Rated Frequency （Hz）	50/60	
Power factor	0.99	
AC （off grid）		
Rated Voltage	230/400	
AC voltage harmonics	<3% （Linear load）	
Frequency （Hz）	50/60	
Rated power （kW）	105	
Maximum apparent power （kVA）	116	
Max current （A）	167	



02

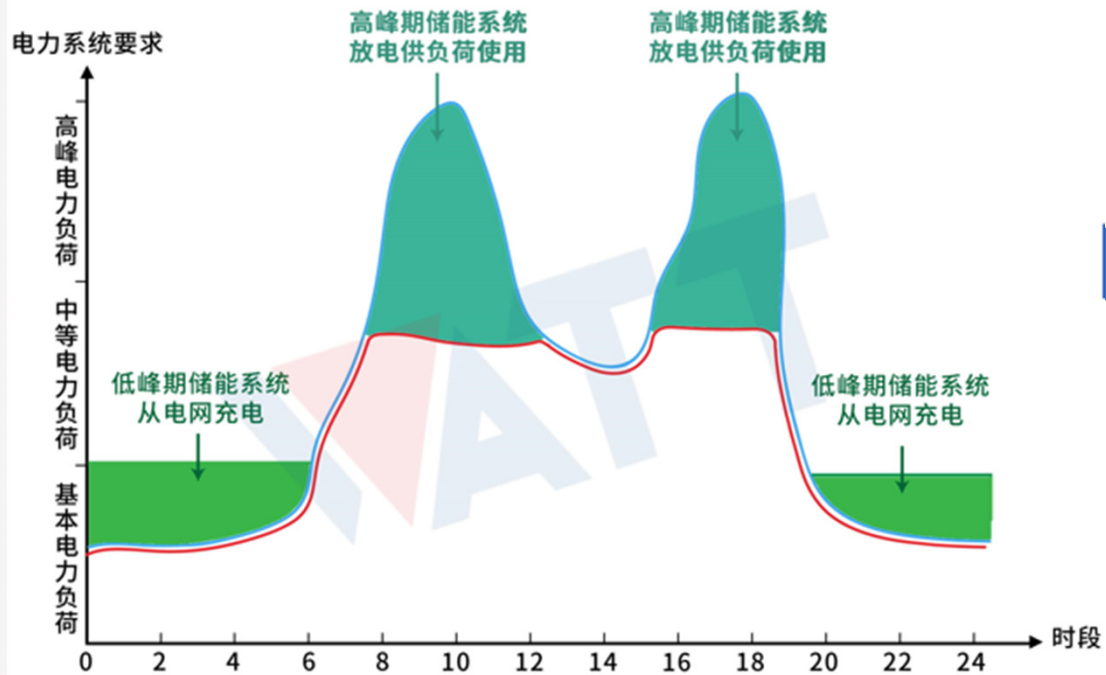
Applications





Unser End- Price arbitration

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Original Transformer



Add new facility



Original Transformer



Dynamic increase of capacity

Advantage: Dynamic increase for capacity meanwhile price abitation

Advantage: lower cost, long term profit

For storage 1-2H

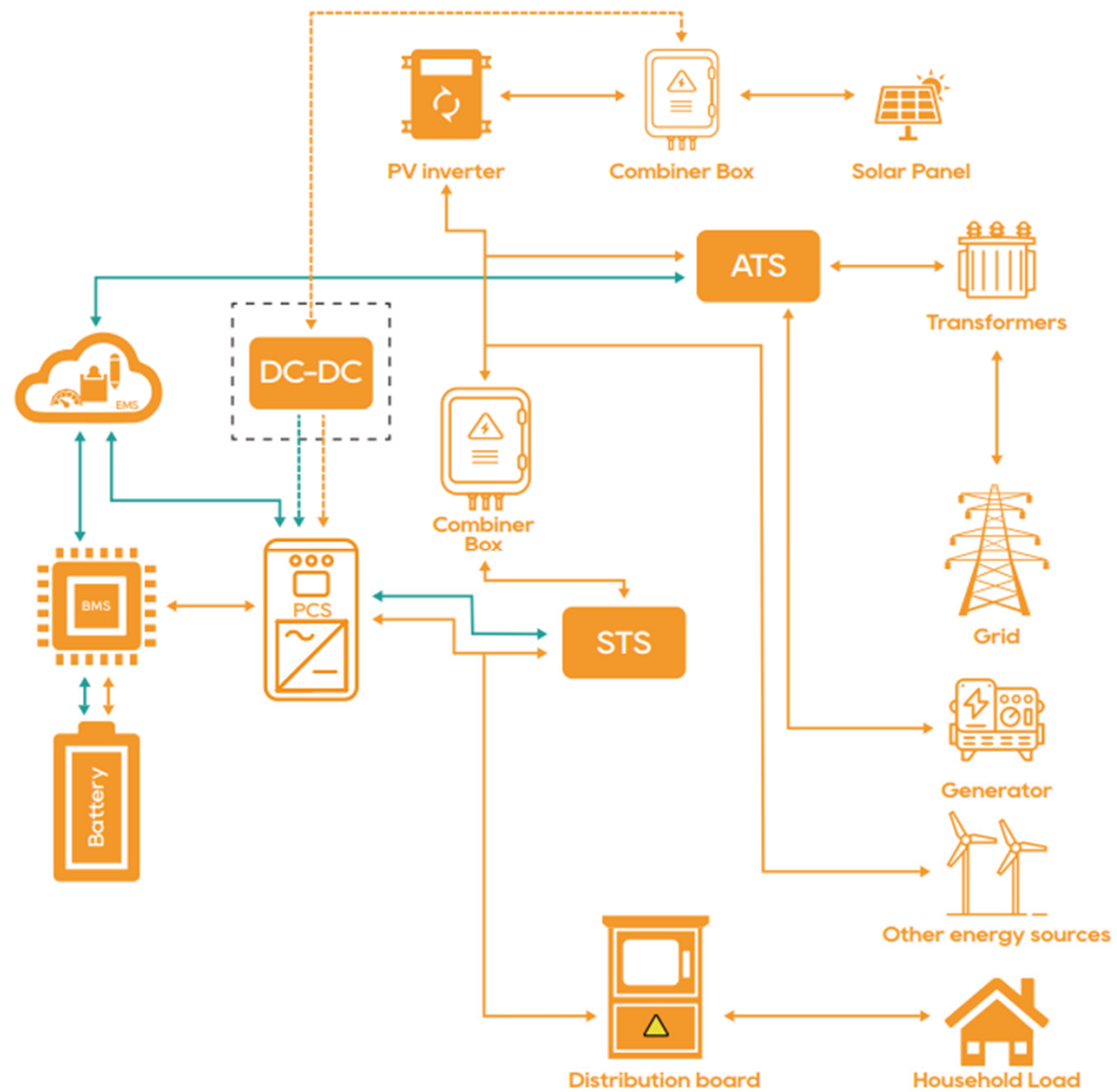


**Back up
power
for grid
failuer**

**Grid
electricity
quality
increase**

System diagram

Pytes





03

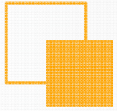
Project Sharing



Project Picture

Pytes





Project Picture

Pytes



Profits from one case

Project profits in March 2024 in Zhejiang Province

汇总	日充电成本(元) charging cost					日放电收益(元) Profits per day					实际收益(元)
日期	Peak 尖	峰	Off peak 平	Valley 谷	总	尖	峰	平	谷	总	
2024-03-01	0	0	0.695	137.153	137.848	0	446.162	0	0	446.162	308.314
2024-03-02	0	0	0.688	136.843	137.531	0	443.914	0	0.31	444.223	306.692
2024-03-03	0	1.135	0.688	137.462	139.286	0	445.038	0	0.31	445.347	306.062
2024-03-04	0	0	0.688	137.462	138.15	0	446.162	0	0	446.162	308.011
2024-03-05	0	0	0.688	137.772	138.46	0	445.049	0	0	445.049	306.589
2024-03-06	0	0	0.688	138.082	138.77	0	446.173	0	0	446.173	307.403
2024-03-07	0	0	0.688	137.772	138.46	0	446.173	0	0	446.173	307.713
2024-03-31	0	1.135	1.376	138.082	140.593	0	442.767	0	0	442.767	302.174
合计	0	15.89	24.11	4269.69	4309.69	0	13788.25	0	0.93	13789.17	9479.48