



Cygni Energy

Electric Vehicle Batteries



INTRODUCING EV BATTERIES,

WITH ADVANCED

**LITHIUM – ION
TECHNOLOGY**

MARKET OPPORTUNITIES FOR ELECTRIC VEHICLE

RENTAL VEHICLE
SELLERS

BATTERY
RETAILERS

HOME DELIVERY
SERVICES

EDUCATIONAL
INSTITUTES

DOMESTIC
CUSTOMERS

TAXI SERVICE

EV AT RAILWAY
PLATFORM

Automobile industry is one of the key segments driving economic growth; Make India pollution free and independent on overseas oil, with renewable resources.

WHY CYGNI EV BATTERY VEHICLE ?



SAVE MONEY

Eliminate your fuel costs and electricity is less expensive than gasoline & better battery life.



CHARGING & DISCHARGING

Quick charging and discharging depending on speed, output discharge should be controllable by app.



INTELLIGENT BMS

Microprocessor based intelligent Battery management system to overall control and protection.



GREEN & POLLUTION FREE

Electric vehicles can be fueled by electricity from renewable sources, and avoid co2 emissions.



TECHNICAL SPECIFICATION

CYgni EV BATTERY



- **1.25kWh - NMC Lithium Ion Battery**
- Battery capacity : 26Ah
- Battery Pack Nominal voltage : 48V
- Efficiency : >98%
- Discharge up-to 80% of the rated capacity
- No. of cycles : 1000+
- IP Rating : IP67
- Weight : ~ 11 kg
- Dimensions (L x W x H) - (288 x 165 x 215)mm
- Communication : CAN (Controller Area Network)



- **1.68kWh - NMC Lithium Ion Battery**
- Battery Capacity : 28 Ah
- Battery Pack Nominal voltage : 60 V
- Efficiency : >98%
- Discharged up-to 90% of the rated capacity
- No. of cycles : 1000+
- IP Rating : IP65
- Weight ~14 Kg
- Dimensions (L x W x H) - (370 x 180 x 155)mm
- Communication : CAN (Controller Area Network)
- ARAI Certified

STATE-OF-THE-ART MANUFACTURING FACILITY



- ❑ 25,000 sq. feet Manufacturing Facility in Hyderabad
- ❑ R&D Center in IITM Research Park in Chennai
- ❑ Separate Production Line for EV Battery Manufacturing
- ❑ Strong Manufacturing and Operations Leadership team
- ❑ Strong focus on Product Quality for reliable and rugged products
- ❑ Technology collaboration with IITM

CYGNI UNIQUE SELLING POINT

- Cygni EV Battery is Micro processor based intelligent Battery Management System (BMS)
- Cell level temperature control
- Cell level Voltage and Current control
- Swappable battery
- Better Thermal management
- Rugged design suitable for Indian road conditions
- Customizable as per vehicle requirement
- Dependable after sales service support



FEATURES OF CYGNI EV BATTERIES

- Lighter and More compact Li-Ion Battery
- Swappable Battery
- Smart software & Hardware for batteries with BMS Control
- High energy density
- Quick Charging capacity
- Multi-motor compatible
- Maintenance free
- Long Life
- Low Overall Cost



CYGNI BATTERY MANAGEMENT SYSTEM (BMS)



Current & Voltage Protection

Protects the battery pack from over-charge and over-discharge thereby extending cycle life



Health Monitoring

Monitors internal resistance of individual cells and the measured capacity of the battery pack



Thermal Management

Over-temperature and under-temperature protection with fan controls for cooling or heating



Digital & Analog Output Controls

Provides multiple methods of controlling chargers, motor controllers and other external devices



Intelligent Cell Balancing

Efficient passive balancing is used to maximize the usable capacity of battery packs



State of Charge Monitoring With Drift

Coulomb counting and dynamic drift correction are used to monitor the state of charge



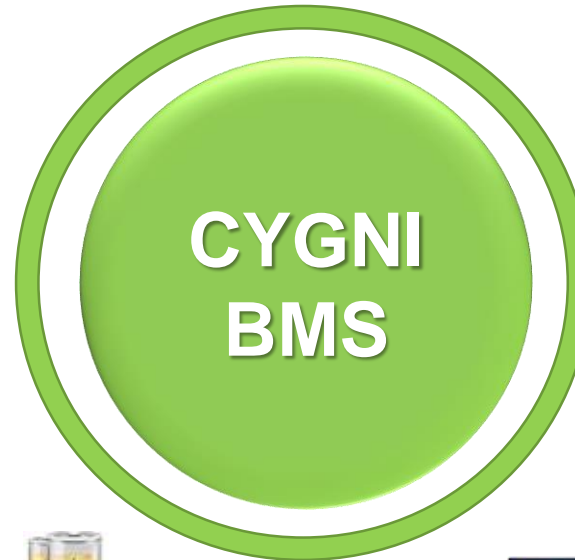
Compatible With Almost All Li-Ion Batteries

A wide cell voltage range supports almost all lithium ion batteries and even some NiMH batteries



Field Programmable

Parameters such as voltage ranges, current limits and many other settings are easily field changeable.



SAFETY SPECIFICATION

EV BATTERY



- Cell over voltage protection
- Pack over voltage protection
- Cell under voltage protection
- Pack under voltage protection
- Over current in charge protection
- Over current in discharge protection
- Short circuit protection
- Over temperature in charge protection
- Over temperature in discharge protection
- Under temperature in charge protection
- Under temperature in discharge protection

QUALITY TEST STRATEGY



Salient features of overall Quality Testing:

- ☐ 100% testing of Li-Ion cells for technical parameters, Dimensions, Weight etc. tests as per IS2500 standard
- ☐ In-Process Quality Check
- ☐ Testing of Semi-finished PCB boards
- ☐ Final Testing of Finished Goods (FG) product
- ☐ Pre-Dispatch Inspection (PDI)
- ☐ On-road Test Drive

Cygni Typical quality Tests:

- ☐ Over Charge Test
- ☐ Short Circuit Test
- ☐ Vibration Test
- ☐ Shock Test
- ☐ Penetration test – Cell level
- ☐ Energy Consumption Test
- ☐ Pack Internal Resistance: 5, 50 and 100% SOC

****Complying Test Standards**

AIS-048, IEC 62133:2012, BIS
16046:2015



TEST DRIVE WITH CYGNI EV BATTERY - VIDEO



Insert Battery pack
inside the vehicle !



Turn ON the
vehicle and drive !



Swap / recharge
the battery,
Ready for the
next drive !

BENEFICIARIES OF EV REVOLUTION

P

UBLIC TRANSPORT

EVs will improve the standards of public transport in India by making it more reliable, eco-friendly and cost-effective. Charging stations will generate additional revenue in this sector.

L

OGISTICS, DELIVERY SERVICES, & TRANSPORT

Mass adoption of EVs by transporters will reduce the emission of greenhouse gasses and the emerging technologies will reduce the costs associated with transportation of goods in long run.

B

ATTERY MANUFACTURERS

Global sale of EV will improve the sale of EV batteries. More incentives for battery makers to invest in R&D to improve battery specifications.

P

OWER COMPANIES & RENEWABLE POWER FARMS

By 2035, one in nine cars sold worldwide will be electric. EV growth will be exponential with new mobility models and emerging technologies.

A

UTOMOTIVE OEMS

Established EV players will have no choice but to offer EVs. Some have already announced plans to switch to only EVs within the next decade.

P

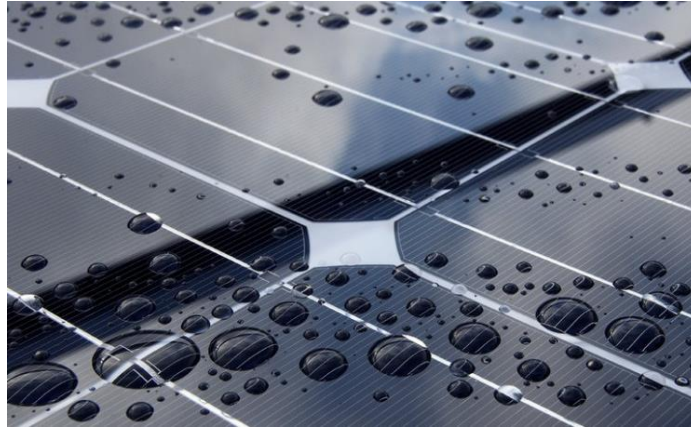
AY, PARK, AND CHARGE

This could benefit a range of service providers from universities and hotels to libraries and malls.

2020



2025



2030



FROM THE CURRENT TO THE FUTURE

The unquestionable Lithium Ion (Li-Ion), and the power electronics will play a very important role, which might see a lot of adoption in India and world-wide.

CONSUMERS -> PROSUMERS

- Instead of relying on grid-supplied electricity, we might see an increased uptake in self-generation of electricity.
- Second-generation smart meters, have the ability to not only to measure consumption but also record electricity generation from a "prosumer."

REMOVAL OF ICEs 100% EV BY 2030

The first target is to replace diesel vehicles with Evs. On top of that, the government also looks to phase out all ICE vehicles by 2030.

KEY CLIENTELE

Educational Institutes



Realtors



Electric Vehicles



Banks and MFIs



Niche Projects



CSR



Awards & Recognition



IEEE – Empower a billion Lives



Diamond Award - Best Rural Electrification Projects by Industry



Greater Good Award for remote Micro-Grid



Emerging Entrepreneur Awards SME Excellence Awards



First company to avail of the benefits offered by the government under **Start-up India** Action Plan



Round 5 Winner

CONTACT US



Head Office (Hyderabad, India)
Road no. 78, Lansum
house, Jubilee Hills
Hyderabad



+91 4023545001



info@cygni.com
sales@cygni.com



www.cygni.com

THANK YOU

Have a nice day