

## Turnkey Solutions for the Complete Solar PV Manufacturing Value Chain

Delivering end-to-end turnkey solutions for the production of **Ingot, Wafer, Cell, Module**, and Battery Energy Storage Systems (**BESS**).



**From Blueprint to GW – Stronger Trust. Faster Value.**

# Who **We** Are



As pioneers in intelligent robotics and mobility solutions, **Novus Hi-Tech** Robotic Systemz is now illuminating the future with our Solar division. We provide complete end-to-end turnkey solutions for **ingot, wafer, cell, module**, and Battery Energy Storage Systems (**BESS**) lines. Partnering with various world-class global innovators, we deliver cutting-edge solar technology with **robust local support, minimizing dependencies on external ecosystems** for seamless execution and unmatched reliability.



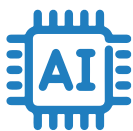
## Vision

Leading the new industrial revolution through intelligent robotics of physical operations.



## Mission

Driving growth in clean energy and high-tech sectors through smart manufacturing and robotics solutions.



Intelligence



Sustainability



Innovation



# Turnkey Solutions for the Complete Solar PV Manufacturing Value Chain

Novus Hi-Tech delivers end-to-end turnkey solutions for the production of **Ingot, Wafer, Cell, Module**, and Battery Energy Storage Systems (**BESS**).

Part of the **\$250 Million The Hi-Tech Group**, Novus Hi-Tech has been a **pioneer in Robotics & Automation since 2005** – driving smart manufacturing excellence across industries, with **2,600+** employees and **100+ customers** worldwide.



Global Partnerships



AI-driven Automation

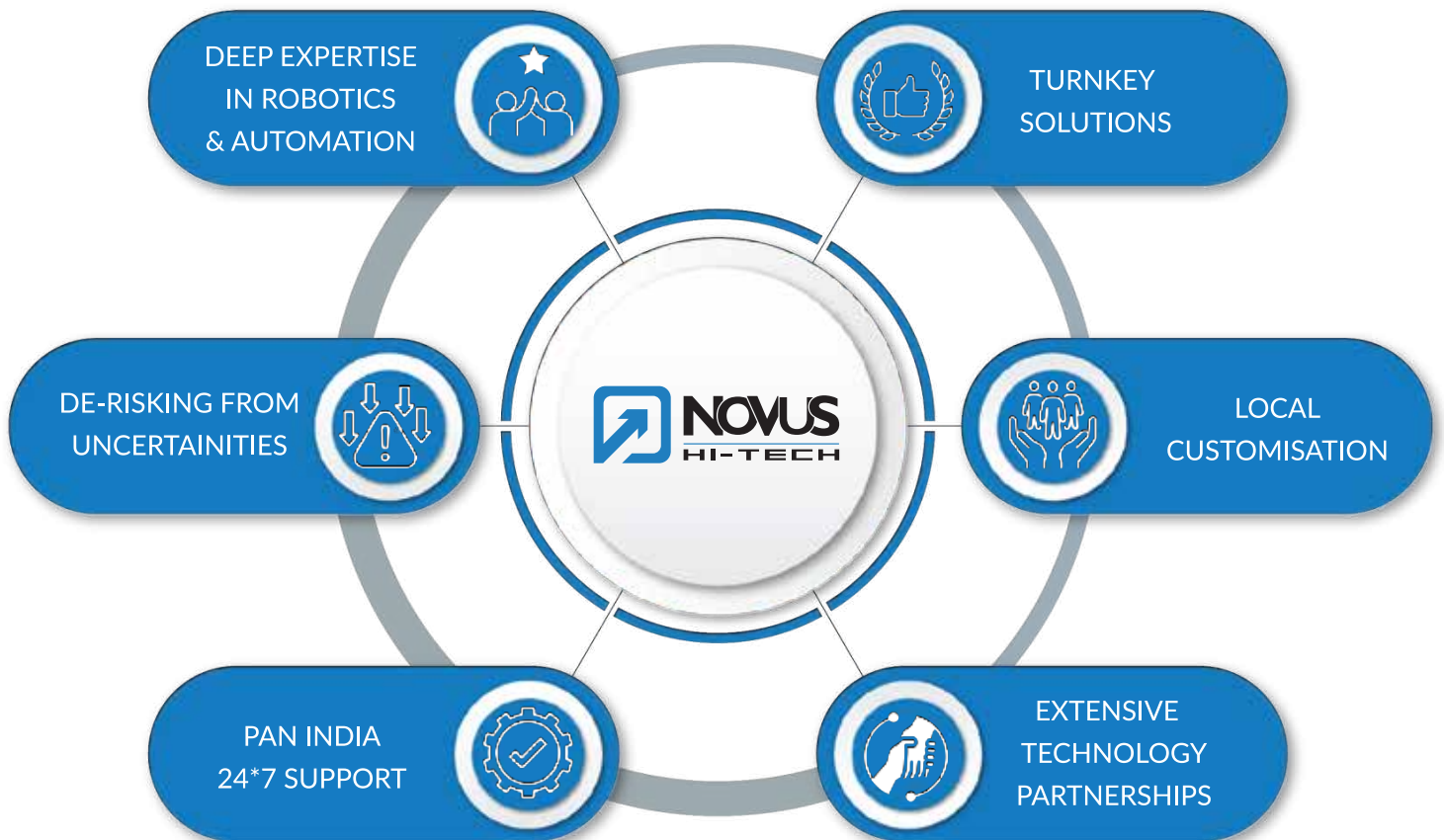


Deep Engineering Expertise



24\*7 Local Service Support

## Why Novus Hi-Tech?



# Our Turnkey Solutions

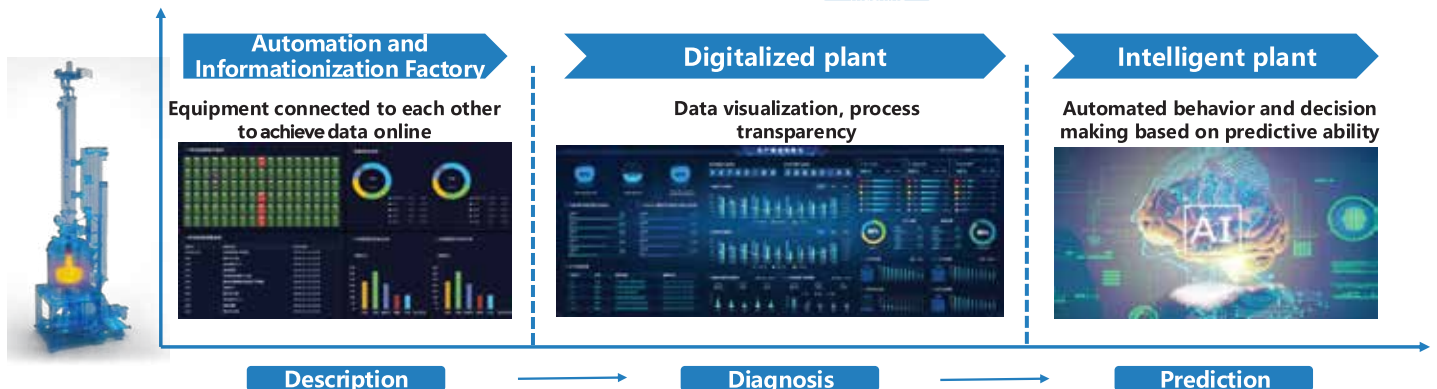
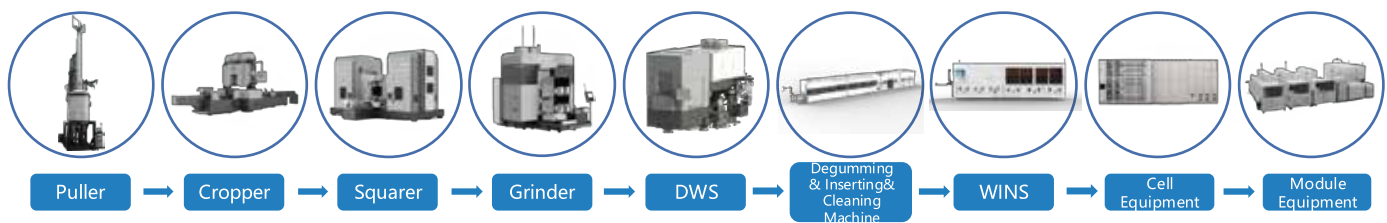
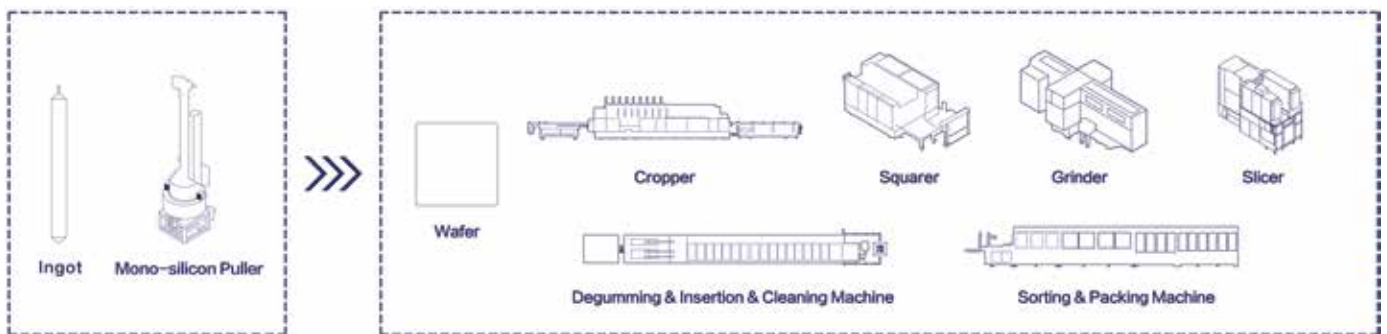
For Ingot & Wafer Production Lines



Photovoltaic Equipment – Comprehensive Photovoltaic Industry Chain Equipment & Smart Factory Solutions

**Industry Position:** Global leader in photovoltaic industry chain equipment technology & scale

**Market Share:** Nearly 40000 fully automatic Cz pullers occupying more than 60% of the market share

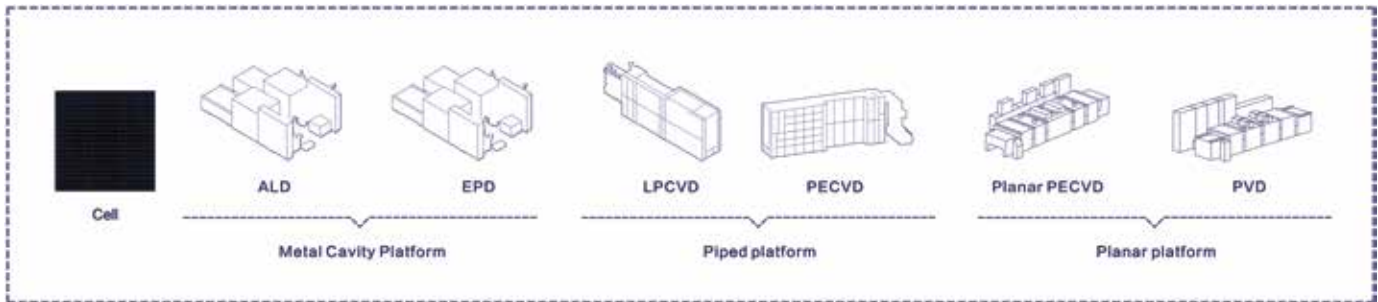


# Our Turnkey Solutions



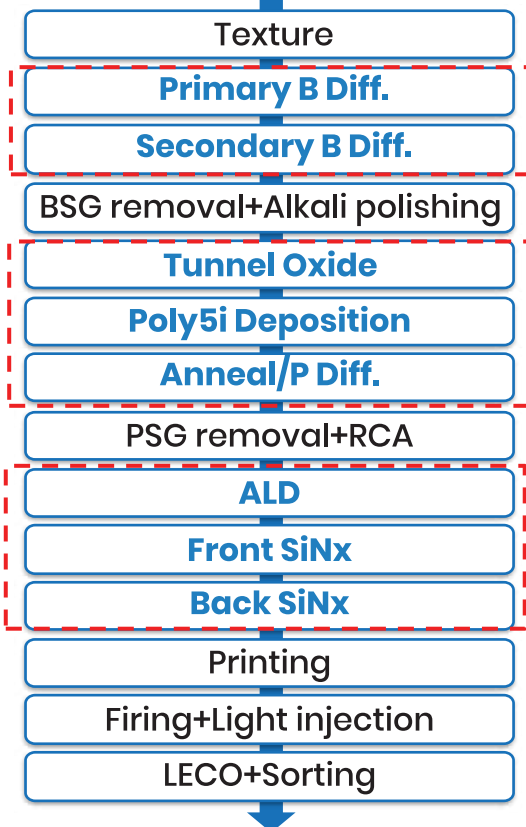
## For Cell Production Lines

AI-powered PV cell production line delivering highest efficiency, lowest breakage, maximum uptime, end-to-end traceability, superior film uniformity, and consistent quality



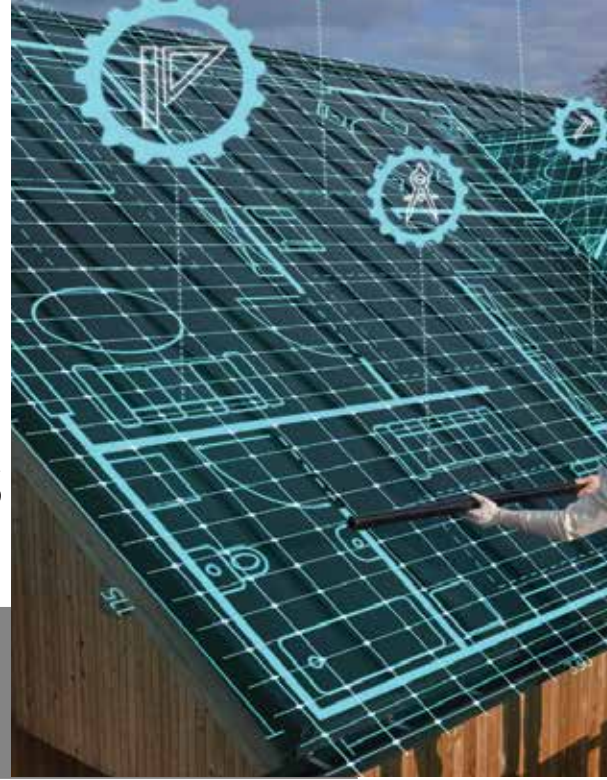
## Turnkey Solutions for TOPCon Cells

### Process Flow



- **High-temperature Processing tools**
- Wet Processing tools
- Metallization & test sorting tools

# Our Turnkey Solutions



## Cell Automation Equipments with AGV



Automatic Loading and Unloading Machine for Batch-Type Tetrating



Automatic B/PSG Removal + Batch-Type Loading and Unloading Machine



Automatic Quartz Boat Loading and Unloading Machine



Automatic Loading and Unloading Machine for Low-Pressure Phosphorus Diffusion



Automatic Loading and Unloading Machine for Tube ALD



Automatic Loading and Unloading Machine for In-line ALD



Automatic Graphite Boat Loading and Unloading Machine



Offline Automatic Transferring Machine



Laser-enhanced Contact Optimization (LECO) Equipment



Horizontal Boron Diffusion Equipment



Solar Cell Interstitial Reflective Film Laminating Machine



Selective Laser Thinning Equipment



Batch-Type Wet Cleaning Series



Chain-type Wet Cleaning Series

### GENERAL FEATURES

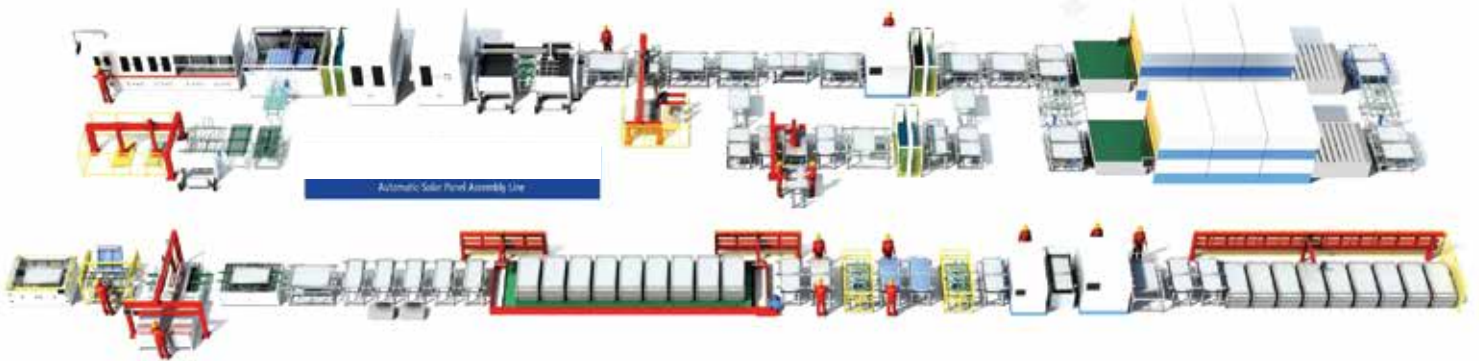
<b>MODEL</b>	<b>NOVUS Carry Solar Cell 500</b>
<b>Payload capacity</b>	<b>500 kg</b>
<b>Type</b>	<b>Autonomous Mobile Robot (AMR)</b>
<b>AMR Guidance Technology</b>	<b>Natural Navigation 3D LiDAR</b>
<b>Battery Charging</b>	<b>Auto Dock Charge</b>
<b>Lifting Height</b>	<b>As per Requirement</b>
<b>Max AMR Speed without load</b>	<b>2.0 m/s</b>
<b>Operation hours</b>	<b>One shift - 8 hours</b>
<b>Drive Mechanism</b>	<b>Differential Drive</b>



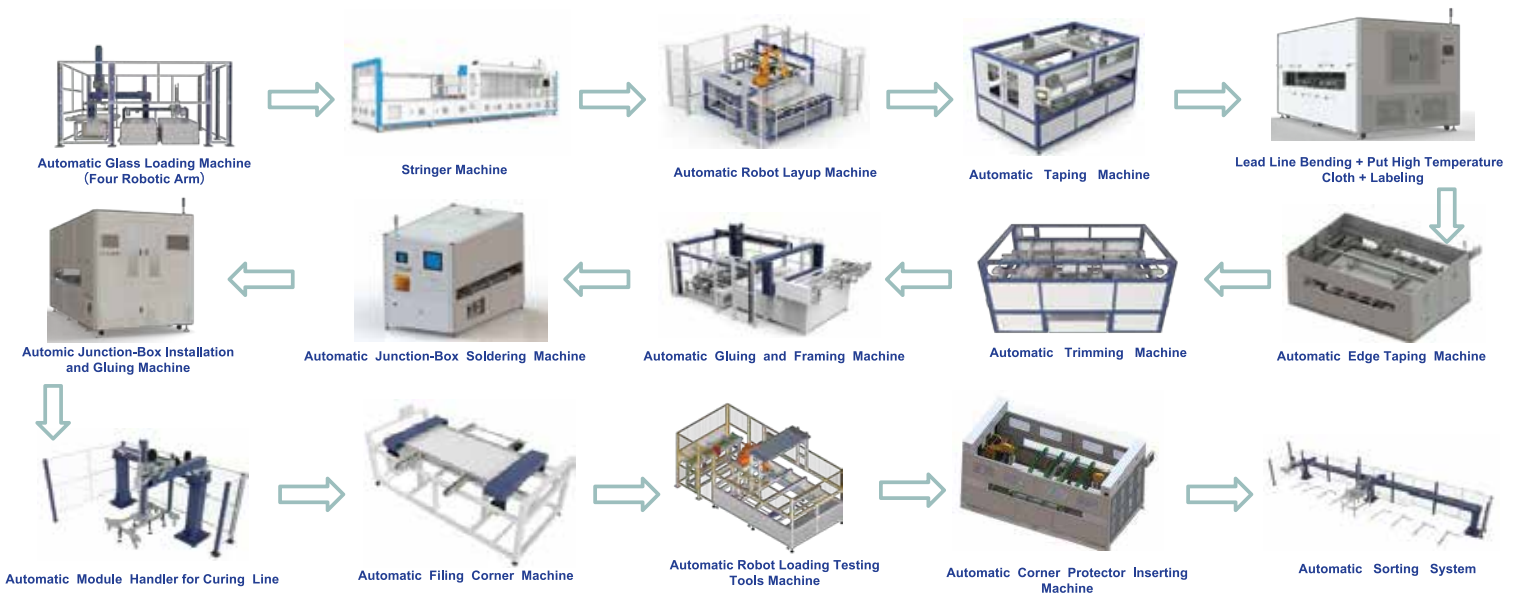
# Our Turnkey Solutions

## For Module Production Lines

AI-Powered Precision for Perfection — Fully Automatic & Robotic Module Lines Delivering Maximum power, Minimal Breakage, and Guaranteed high Quality panels , 24/7.



## Full Automatic Solar Module Production Line

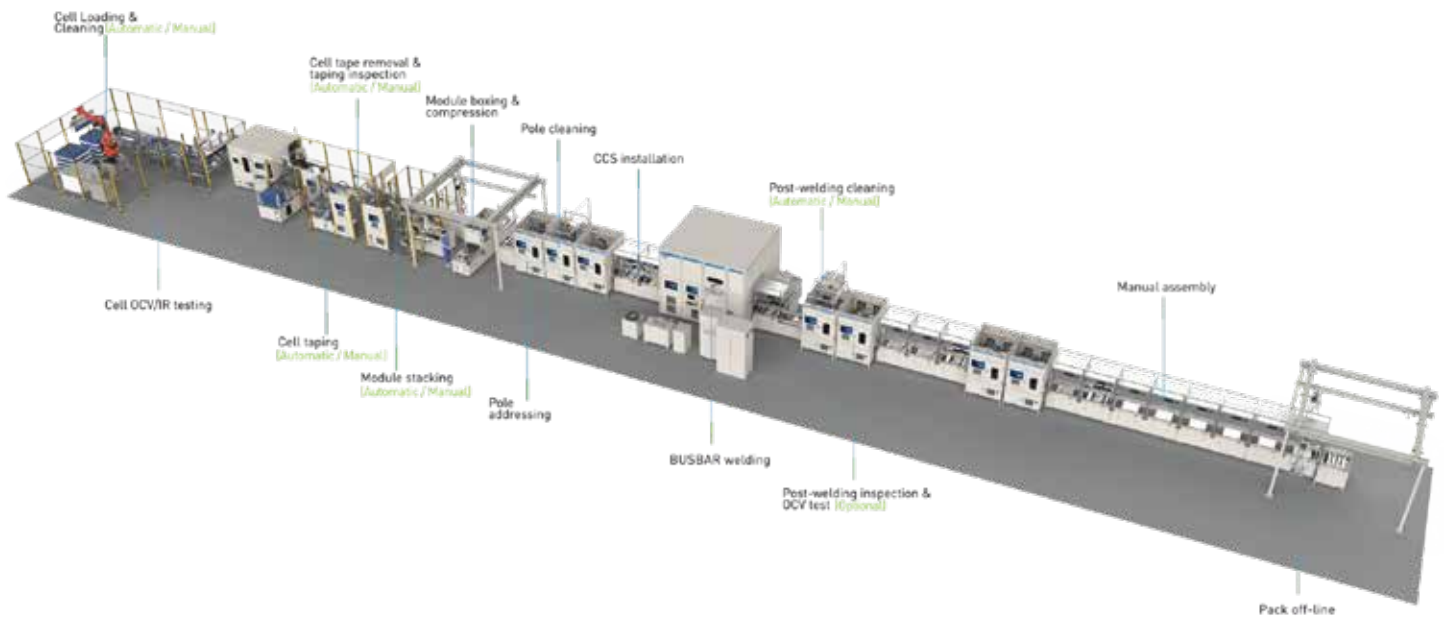


# Our Turnkey Solutions

For Battery Energy Storage Systems



## Battery Module/Pack Automation Assembly Line



### I Application Scenarios

#### Power Battery Pack Automated Production Line

- EV batteries for electric passenger vehicles
- EV batteries for electric commercial vehicles
- EV batteries for two-wheeled vehicles

#### Energy Storage Pack Automated Production Line

- Portable
- Residential energy storage
- Commercial & industrial energy storage
- Containerized energy storage



High Flexibility



Safe and Reliable



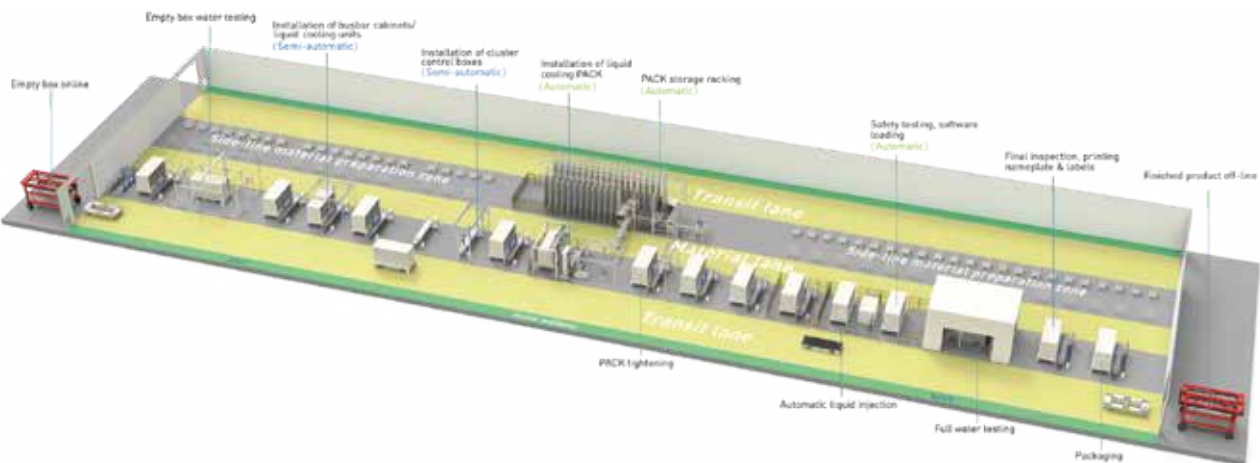
Digital Intelligent Manufacturing

# Our Turnkey Solutions

For Battery Energy Storage Systems



## Energy Storage Container Assembly Line



## Product Introduction | Battery Testing

### Cell Testing System (GTC)



0V-6V  
0A - 5000A

- Laboratory high-precision battery cell testing.
- Laboratory/production line battery cell testing.
- Laboratory charge/discharge power supply temperature chamber integrated machine.

### Module/Pack Testing System (GTB)



0V-200V  
0.03A-1000A



0V-500V  
0.15A-2100A

- Power tools, hoverboards, and drones
- Vacuum cleaners and medical devices
- Electric two/three-wheeled vehicles
- Residential energy storage
- Low-speed electric vehicle
- New energy vehicle



0V-1650V  
0.075A-1200A

- Flying car
- Commercial & industrial energy storage
- Large energy storage batteries
- Battery cluster testing

### Pack EOL Testing System (GTA)

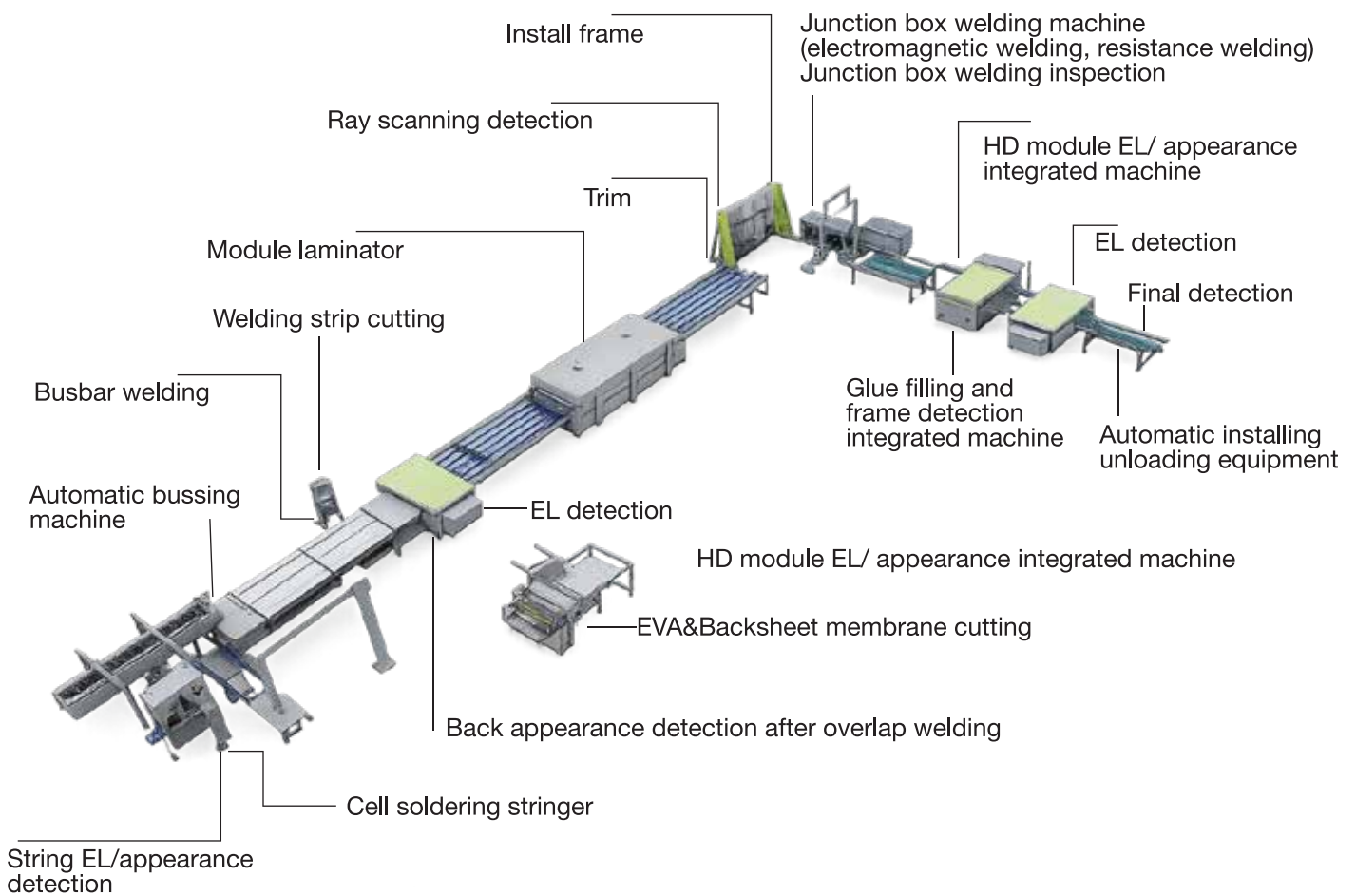


- Capable of testing various types of battery packs such as electric vehicle battery packs, energy storage battery packs, and small power battery packs.

Air tightness testing (optional).



# Novus Solar Module Manufacturing AI Vision Inspection Solution



String EL/appearance-AI inspection+EL inspection rework



Module EL/appearance inspection



Welding machine AI



Module EL/appearance inspection



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8



Back appearance AI after overlap welding



Ray scanning appearance AI before framing



Nameplate/glue AI



Final inspection AI

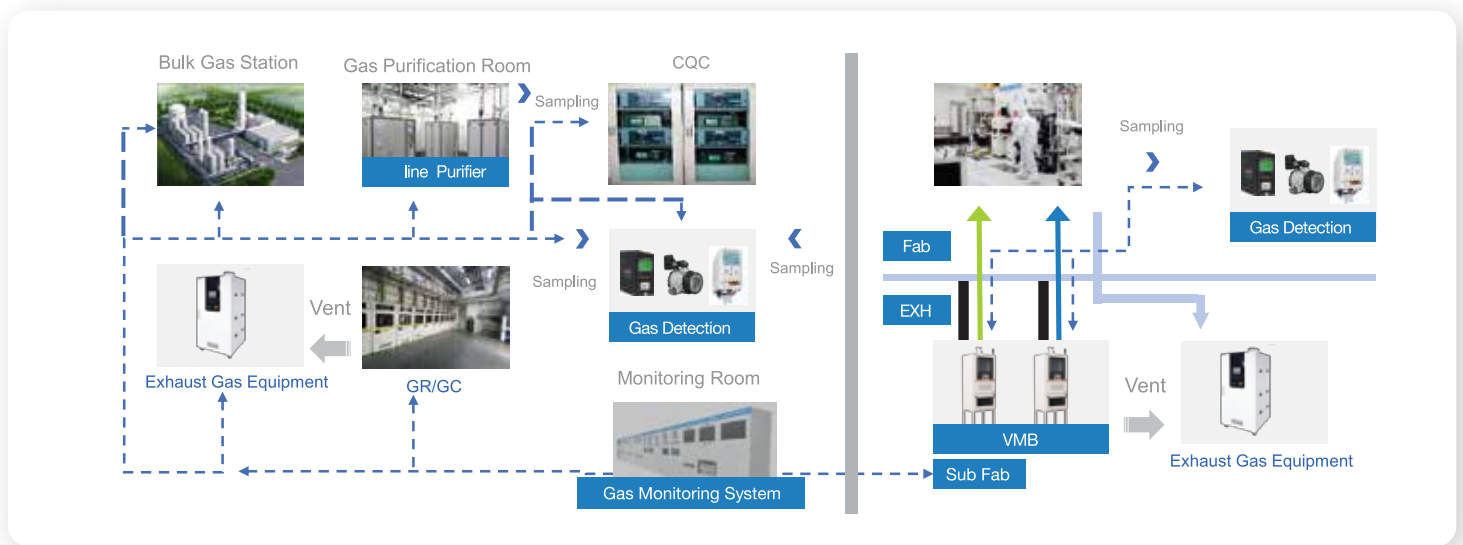
# Gas and Chemical Delivery System

Bulk Gas Delivery System

Special Gas Delivery System

Gas Monitoring System

Exhaust Treatment System



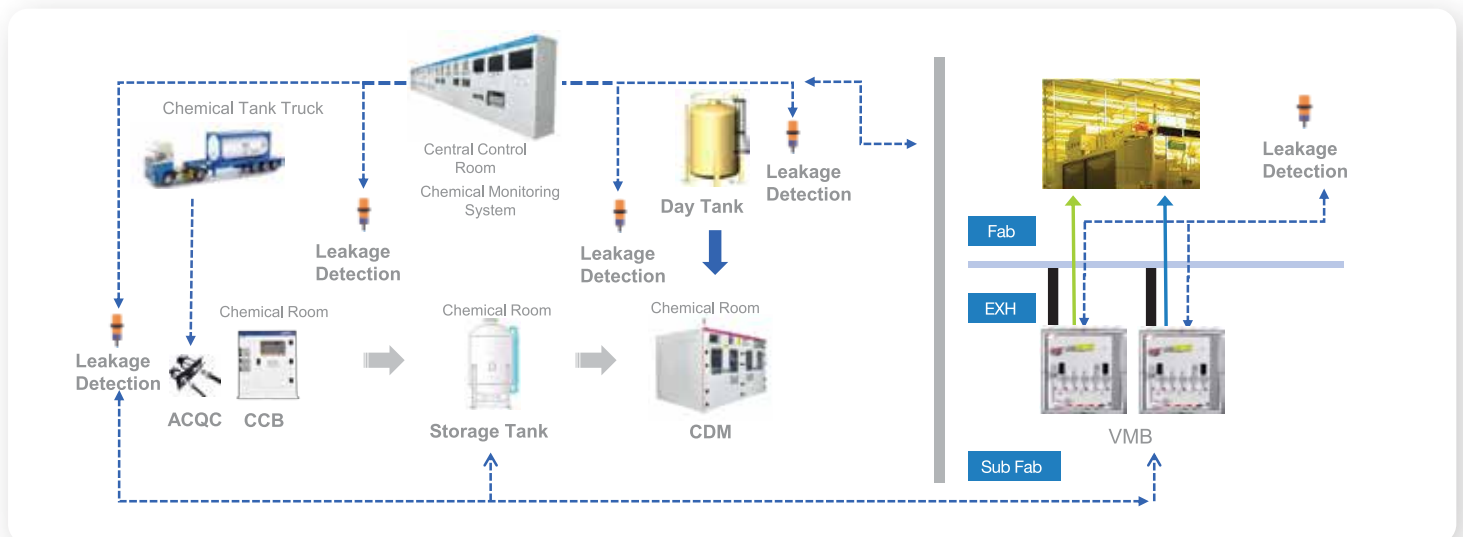
Chemical Delivery Equipment

Mixing and Slurry Equipment

Chemical Delivery System

Chemical Monitoring System

ACQC and Tank Supply



# About The Hi-Tech Group

**\$250 Million Group** | **26+ Years Of Operation**

As part of The Hi-Tech Group, Novus Hi-Tech benefits from the strength of one of the leading automation and technology firms in the industry. With a global presence and deep expertise in robotics, automation, and AI, The Hi-Tech Group is committed to driving innovation in the **solar PV and energy storage sectors.**



## 2600+ Employees

Across multiple divisions, including robotics, AI, and automation



## Global Presence

Operations in 10+ countries with 5 state-of-the-art manufacturing plants



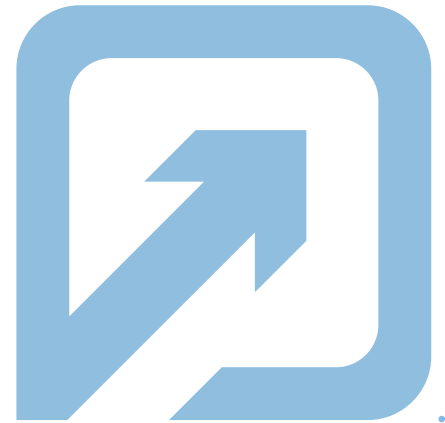
## Manufacturing Capacity

Over 1 Lac square feet of production space dedicated to high-tech manufacturing



## Innovation & R&D

**150+** Patents Filed, with research centers, HiTech Group continuously invests in R&D, driving innovation in smart automation systems





## Contact Us

### R&D CENTER

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Bhiwadi, (301019)  
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