



ESG 2022 SUMMARY REPORT

E-ONE MOLI ENERGY CORP.



MOLICEL®

Brand identity

MO

Molybdenum Disulfide (MoS₂)

(+) Cathode Material



Lithium (Li)

(-) Anode Material

CEL

Cell

A single unit of device that
converts chemical energy into
electrical energy

- 1977 ◦ Molicel the brand founded
- 1998 ◦ E-One Moli Energy Corp. founded
- 2000 ◦ E-One Moli Energy Corp. acquired NEC Moli Energy (Canada) Limited
- 2004 ◦
 - Cooperated with power tool maker Makita to announce world's first power tool Li-ion battery pack
 - Launched the first 18650 Li-ion cell for power tool application in the world
- 2005 ◦ Sole battery provider of CTO in Asia
- 2013 ◦ Cooperated with ITRI to successfully develop Taiwan's first made-in-Taiwan electric car
- 2016 ◦ Teamed up with ITRI Green Energy Department for 1MWh Solar Energy Storage System
- 2017 ◦ Power cell approved by leading cordless vacuum cleaner maker
- 2018 ◦
 - Collaborated with Uber Elevate for eVTOL battery pack development
 - Taiwan's first public tender for 1MWh ESS Longjing Project for ITRI

- 2019 ◦ 1500kWh BESS system deployed in Tainan Plant (Taiwan)
- 2020 ◦
 - Collaborated with NHOA.TCC to obtain Taipower's first ESS Automatic Frequency Control (AFC) contract, and became the only facility that won the highest 5MW service capacity, as the same level as TESLA
 - Selected by the British supercar brand McMurtry and limited to 130 units of production
- 2021 ◦
 - Cooperated with Williams Advanced Engineering to develop electrification of heavy-duty trucks
 - New generation 4.5Ah P45B launched, highest capacity in the high-power cell market, and full fast charging in 12 minutes
 - Selected by the Croatian supercar brand Rimac Automobili and limited to 150 units of production
- 2022 ◦
 - Technically collaborated with McMurtry, and set a new all-time record at Goodwood, Festival of Speed, UK
 - Selected by eVTOL manufacturer Vertical Aerospace to develop and supply V4 into service
 - Partnering with KULR for battery safety and thermal management solutions

Parent Group-TCC



Taiwan Cement Corp.

Established Y1946, Dec

Capital US\$ 2.1 BN (Paid-in capital)
US\$ 9.8 BN (Group value)

Public Listed 1101.TCC (TWSE)

Core Business Low-carbon Construction Materials
Resource Recycling
Green Energy



E-One Moli Energy Corp.

Established Y1998, Mar

Capital US\$ 901 MN

Core Business LIB Power Cell technology
LIB Power Cell production
Material R&D
Cell design R&D



Moli Quantum Energy Corp.

Established Y2021, Mar

Capital US\$ 716 MN

Core Business Advanced manufacturing technology
LIB Power Cell production



2022 ESG Highlights | Environment

1.17

Metric tons of CO₂e
/ thousand battery products
of carbon intensity

4.06%

Energy saved
from Annual Energy-saving Project

7%

Renewable energy usage

62%

Waste recycling rate

47%

Hazardous waste reduction

ISO 14001

Third-party certified

ISO 14064

Third-party certified

Molie Quantum Energy Corp.

Gold Certified

Gold Level of Taiwan's Green
Building Labeling and LEED

2022 ESG Highlights | Social

100%

Human rights advocacy coverage rate, with a 93% achievement rate for online statement reading

50%

The conversion rate of industry-academia collaborations

5,194 kg

Fight for Azure Ocean Program recycled ocean floating debris

+1.2%

Females in management

279

Certifications obtained from the employees

67%

Research and development personnel hold master's or doctoral degrees



Awarded the Health Initiatives Emblem by the Ministry of Health and Welfare, National Health Insurance Administration

2022 ESG Highlights | Governance

100%

Average attendance of the Board of Directors

100%

Employees signing the Statement of Integrity and Ethical Conduct

380hrs

Integrity & Ethics Trainings

0

Incidents of corruption or bribery

2

Social engineering drills conducted with a non-compliance rate below the 7% standard, set by the Executive Yuan

1,285hrs

Information security trainings

61%

Green procurement ratio

19%

Local suppliers



2022 ESG Highlights | Product Innovation

The cathode powder used in the product's raw materials contains recycled materials

including



30%
nickel



30%
cobalt

70% 
Recycled copper foil
was utilized for the production

-9%
usage

The product's space packaging material is reused in a circular manner

0

Product safety violations

Obtained product certifications:

UL1642 / IEC62133

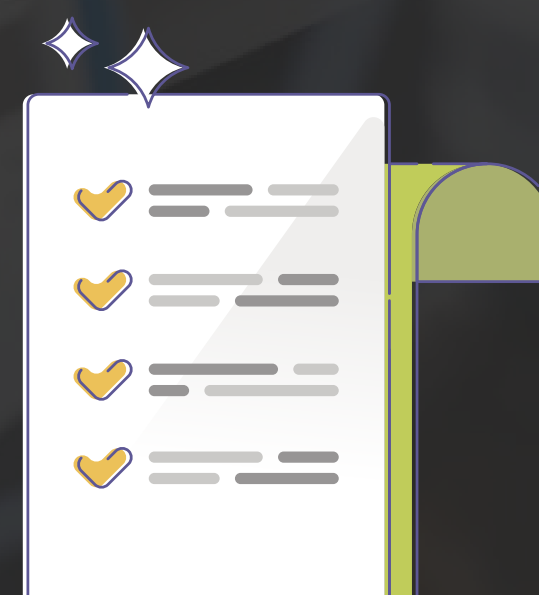
Basic requirements of battery pack safety

UN38.3

Conformity to battery transportation regulations

ROHS / REACH

Conformity to the compliance with the restricted substances in products and the requirements of green supply chain



2022 ESG Highlights | Product Application

The 1st place

in 2022 McMurty Speirling

The 5th place

in 2022 Formula Student Germany

The 5th place

in 2022 Croatia Formula Student
Alpe Adria



Generation 1

P42A

- Capacity: 4200mAh
- Impedance: ~18mohm
- Endure up to 500 charging cycles

Generation 2

P45B

- Capacity: 4500mAh (+7%)
- Impedance: ~12.3mohm(-31.7%)
- Retain 73% of its capacity after 1,000 charging cycles
- DCR -22%
- Capable of 3C charging rate

New Generation

P50B

- Capacity: 5000mAh (+11%)
- Impedance: ~11.5mohm(-6.5%)
- Retain 83% of its capacity after 1,000 charging cycles



Products Features

To satisfy the customers who believe in green life, higher mobility performance and longer lifetime, MOLICEL's product development focuses on the following features:

 High power	 High capacity	 High reliability
 Low impedance	 Thermal management	 Extended life cycle (2 nd use)



 TARGETS

20%

Enhancement of energy density and capacity

Product life cycle management

R&D focusing on enhancing the product life cycle

MOLICEL actively adopts materials and design concepts that comply with international safety regulations during the research and development phase. Furthermore, we are dedicated to enhancing the benefits of second use for batteries. When designing and developing new types of batteries, we consider their potential to be repurposed or utilized for other applications, such as energy storage equipments, after their initial use.



Products Features

Recycled raw materials in manufacture

MOLICEL is committed to manufacturing products that meet environmental standards, and requiring all finished products to pass relevant UL, UN, and IEC certifications while adhering to ISO 9001, fully complying with international regulations.

MOLICEL aims to use environmentally friendly raw materials whenever possible. We promote the usage of high-end second-hand batteries and actively recycle cathode materials. The recovery rate for NMP systems has achieved impressively 90% during process and has further transferred to water-based systems to minimize environmental impact.

Additionally, we engage in discussions with suppliers regarding the recycling and reuse of raw materials to improve battery efficiency, reduce resource consumption, and minimize waste during the manufacturing process. In the future, we will collaborate closely with energy storage experts from TCC to establish material recycling programs and establish a collaborative model involving suppliers and customers.



Products Features

Product Recycling

MOLICEL will begin with the recycling, reuse of cathode materials, and gradually expand our efforts to include other raw materials and finished products. Furthermore, we are investing in research on battery recycling processes and developing new technologies to transform waste materials into reusable materials. In the future, we will establish partnerships with our customers to jointly promote battery recycling mechanisms. Besides, to achieve the circular economy, we plan to collaborate with suppliers to explore further processing of waste batteries into black mass, which can be reintroduced into the manufacturing process.

Carbon Footprint

In order to meet the requirements of EU battery regulations, by the end of 2023, the carbon footprint of the main product (P42A) will be counted. In 2024, product carbon footprint will be incorporated into product P45B, and gradually expand to all product lines.



Environment

Commitment: 20% carbon reduction by 2030

MOLICEL actively implements greenhouse gas management in response to the international carbon reduction trend. Simultaneously, MOLICEL embraces the "Cradle to Cradle" concept as our goal for resource recycling and reutilization.



TARGETS

Energy-saving
3.01%

Waste recycling rate
67%

GHG Management

In 2023, MOLICEL implemented ISO 14064-1:2018 to comprehensively promote the inventory and verification of GHG emissions. The year 2022 was set as the baseline year for GHG inventory. The third-party verification will be completed in the fourth quarter of 2023.



Energy Management

MOLICEL has currently set up a 496.62 kW solar power system, with a renewable energy usage proportion of 7%. Additionally, a 1.2 MW energy storage system has installed with a power ancillary service agreement with Taipower to assist it in stabilizing power supply.

The energy-saving target for 2022 was set at a 1% reduction compared to 2021. After implementing various energy-saving projects, the actual energy-saving reached 4.06%. Therefore, for 2023, a more ambitious target of a 3.01% reduction compared to 2022 has been set.



Energy-saving projects:

- ✓ Replacing lighting fixtures with LED
- ✓ Optimizing the operation mode of the winter chiller system
- ✓ Raising the EMT chiller water outlet temperature

Waste Management

To achieve the goal of waste reduction target, reducing production at the source and improving recycling rate are both important aspects. MOLICEL effectively classifies the types of waste, and evaluates the feasibility of recycling and reuse to reduce the total output of waste and save waste disposal fees. Furthermore, the principles of reducing incineration and landfilling are implemented to reduce carbon emissions.

MOLICEL's main waste comprises other mixed chemical substances and their packaging containers. In 2022, by implementing waste reduction and recycling measures, including the recycling and reduction of waste space packaging, aluminum foil bags, carbon powder reclassification, and pulp material reclassification, the waste reduction reached 47%, with cost savings of NTD 2,801,005. The overall waste recycling rate reached 62%.

MOLICEL will continuously conduct recycling and reuse assessments for process-generated waste, such as the noble metal recovery from the waste slurry project, as well as waste battery recycling. MOLICEL has set a target to achieve a waste recycling rate of 67% in 2023.

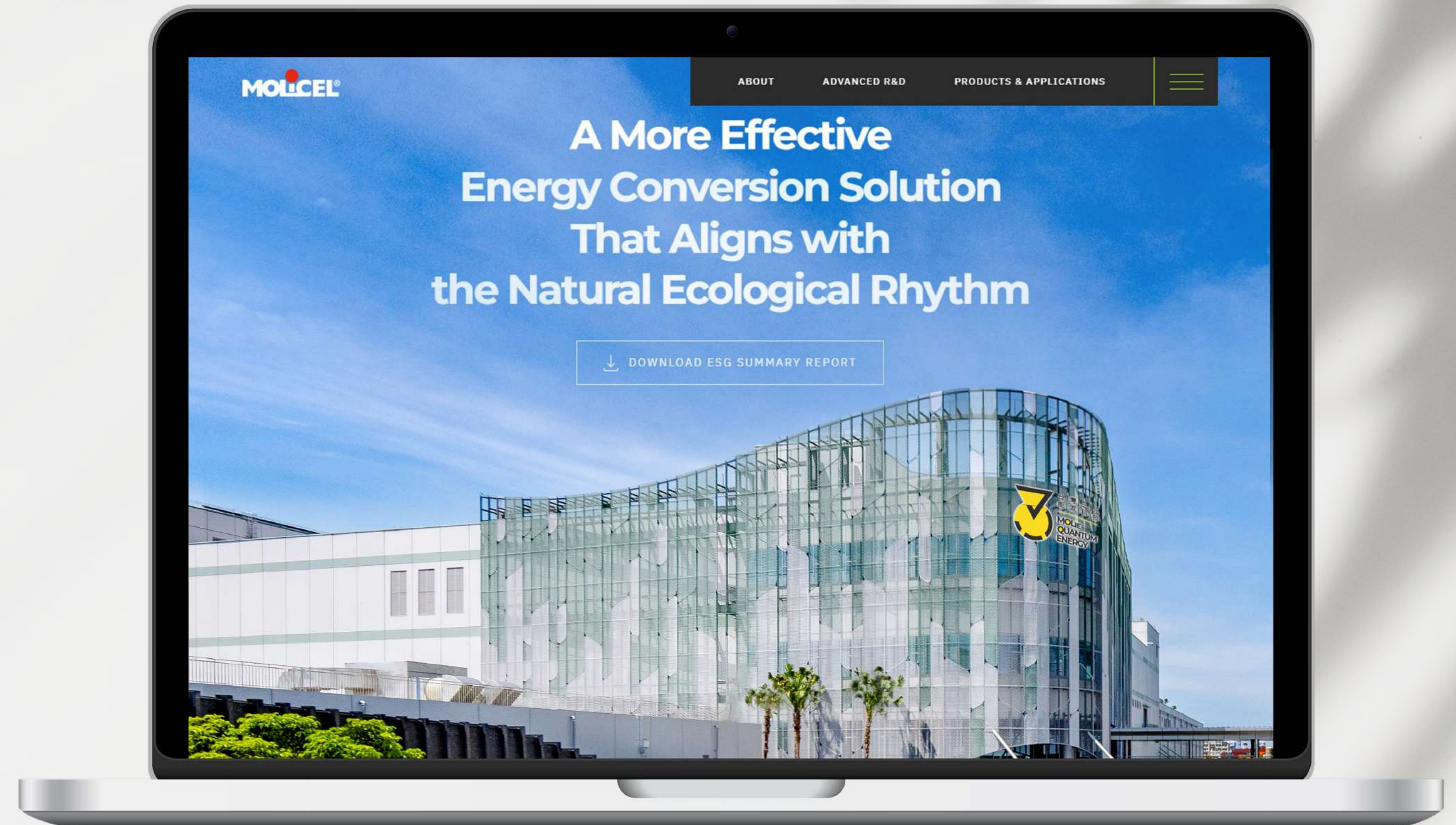
Governance

MOLICEL focuses on the improvement of corporate governance, and ensures that its strategies and actions comply with regulations and ethical standards, through the establishment of effective decision-making and oversight mechanisms. MOLICEL actively takes measures to safeguard the rights and interests of internal and external stakeholders and enhances the transparency of information to gain trust and support.

Sustainable Governance Structure

In addition to regularly convening board meetings to discuss important decisions, MOLICEL's chairman engages with department heads through bi-weekly meetings. These discussions primarily focus on the company's operational status and issues, including production, quality, sales, and financial aspects. By staying updated on the latest market trends, the chairman ensures that the company can adjust its strategies promptly and continuously enhance competitiveness.

In May 2023, MOLICEL established its Corporate Sustainability Team, which operates under the General Manager's office. To enhance communication with stakeholders, MOLICEL released its first ESG summary report, which highlights MOLICEL's sustainable practices and outstanding performances. Also, an ESG section on MOLICEL's official website will be set by 2023.




Governance


Ethical Management


MOLICEL will adhere to the Ethical Management Best Practice Principles, Anti-Corruption and Anti-Bribery Policy, Procedures for Anti-Corruption and Anti-bribery Management, Anti-Corruption and Anti-Bribery System Manual, and other related regulations established by TCC. Employees, business partners, directors, and managers are required to uphold the principles of integrity management, comply with the anti-corruption and anti-bribery policies. In 2022, MOLICEL had 0 incidents of corruption and bribery.


Active employees are required to participate in the anti-corruption and anti-bribery training courses at least once a year with records kept to fully understand related regulations and the possible risks and consequences of any violations. Moreover, new recruits are required to sign the Statement of Integrity and Ethical Conduct on the date of employment and receive promotion of the anti-corruption and anti-bribery policies within 90 days thereafter with records kept.

Reporting and Grievance Channel

**Employee Feedback Mailbox**
(Located in B1 with facial recognition, restaurant, and unit restrooms)

**7885 Hotline**

**Dedicated Line account**



Risk Management

Risk Management Team conducts internal and external situational analyses annually, based on risk types, failure modes, and other factors. After discussions, significant risk issues are identified and then managed through project management to control and mitigate the impact of risks on the company's operations, product delivery, and customers.

In 2022, MOLICEL conducted assessments of risks related to quality, environment, and occupational health and safety hazards. After consolidating the results, MOLICEL focused on enhancing disaster prevention and response capabilities, implementing ISO 45001, and addressing GHG emissions as significant risk issues. All strategies to improve these risks issues have already been planned.

Governance

Information Security

MOLICEL adopts the ISO 27001 information security standard framework and continuously improves its information security measures through the PDCA, including conducting risk assessments, formulating information security policies and KPIs, enhancing staff awareness of information security, implementing security technologies, regularly monitoring audit trails, and conducting internal and external audits. These measures are put in place to ensure the effectiveness of information security protection. In 2022, there were 0 information security incidents.



▲ Non-camera mobile phone

MOLICEL has implemented a private 3C mobile device control solution to provide secure mobile phones without cameras, preventing unauthorized capturing of production data. Moreover, MOLICEL conducts an annual Manufacturing Execution System restoration drill and organizes trainings to enhance the information security awareness of all employees. MOLICEL also plans to continuously achieve IATF 16949 and AS9100 certifications in the future.

Supply Chain Management

MOLICEL's supplier management policy is to ensure consistency among suppliers in terms of quality, cost, delivery time, service quality, environmental safety and health, and production. MOLICEL collaborates with suppliers to promote environmental protection, human rights, and sustainable development through resource recycling, and strictly avoiding using illegal or unidentified materials, driving the sustainable development of our supply chain.

In the future, MOLICEL plans to conduct assessments of suppliers' performance in environmental, social, and corporate governance. Based on the findings, MOLICEL will establish supply chain ESG goals and require suppliers to make improvements while providing support and guidance.



MOLICEL conducts annual evaluation for existing suppliers, covering various assessment criteria.

Governance

Conflict Minerals Management

MOLICEL has established internal and external management and policies for conflict minerals, including the Material and Component Evaluation Management Procedure, Green Product Guidelines, Conflict Minerals Policy, Supply Chain Policy for Responsible Global Supply Chain of Minerals from Conflict-Affected and High-Rick Areas, and Declaration For Substances Restricted.

MOLICEL never purchases conflict minerals, such as copper, aluminum, nickel, cobalt, manganese, lithium, graphite, etc., produced from Democratic Republic of the Congo and adjoining areas, and conduct due diligence when sourcing raw materials. MOLICEL evaluates the compliance of hazardous substances, and requires suppliers to provide compliant products and submit conflict mineral reports to proactively manage and reduce procurement supply chain risks.



Green Procurement

MOLICEL prioritizes the procurement of products and materials that have obtained Eco-Label, as well as aligned with the principles of using recycled materials, recyclability, and low pollution and energy consumption in their manufacturing, use, and waste disposal processes. MOLICEL also gives priority to engaging with contractors recognized by the government. In 2022, the total amount of green procurement was approximately NTD 3.8 billion, accounting for approximately 61% of the total annual procurement expenditure.



Social

MOLICEL is dedicated to establishing a platform that promotes talent growth and development. We value the rights of each employee, providing generous benefits and opportunities for advancement to all employees. MOLICEL also empowers our employees, fully inspiring their developmental potential, and aims to improve together with the growth of talents and the company's progress.

Furthermore, MOLICEL continuously collaborates with various sectors of society, committing to promoting philanthropic endeavors and fostering positive community relations. We strive to achieve a dual benefit of both economic and social gains through these efforts.

Diversity, Inclusion, and Equality

Committed to creating a harmonious and healthy working environment and safeguarding the human rights of our employees, MOLICEL adheres to the United Nations Global Compact, UN Universal Declaration of Human Rights, and ILO Declaration of Fundamental Principles and Rights at Work. Furthermore, MOLICEL follows Human Rights Policy, Statement of Integrity and Ethical Conduct, and Declaration on Prohibition of Workplace Sexual Harassment, formulated by TCC. Besides, MOLICEL is dedicated to pursuing the Responsible Business Alliance and will issue Freedom of Action Policy in 2023 to enhance policy promotion.



Social

Occupational Health and Safety

MOLICEL has established an Environmental and Occupational Health and Safety Committee in compliance with the law, with the labor representatives accounting for 37%. In 2022, MOLICEL has also revised its Environmental and Occupational Health and Safety Policy, and obtained ISO 45001 certification. MOLICEL continuously implements a Plan-Do-Check-Act cycle management mechanism, along with corresponding management, supervision, and improvement measures. Various operational standard procedures are implemented to enhance proactive safety performance management and reduce risks related to factory safety, health, and environmental aspects. Moreover, to ensure that employees have access to necessary medical and health care at any time during work hours, including weekends, MOLICEL has a nurse on duty every day.

Diversity, Inclusion, and Equality

95% Participation rate of annual health check-ups for all employees

233 New recruits

Completed safety and health education training

161 Contractors

Completed safety and health education training



Social

Talent development and Retention

MOLICEL has been recruiting talents in R&D, engineering, and production departments due to increased order demands in recent years. To enhance the competitiveness, MOLICEL actively cultivates employees' knowledge and innovative technologies in the battery industry, and emphasizes in-depth research in the battery field, specialized training, and the recruitment of diverse talents as three key employee development principles. In 2022, MOLICEL promoted three major talent development programs, including the workplace mentorship program, the industry-academia collaboration, and employee referral bonus. These programs aim to reduce employee turnover, stabilize the workforce within the company, and increase internal promotions.



Employee Benefits

Employee care and support

- Marriage and funeral subsidies
- Maternity allowance
- Electric scooter purchase subsidies
- Rental subsidies
- Emergency relief loan

Salary benefits

- Three festival bonuses
- Employee referral bonus
- Employee Stock Option Program (ESOP)
- Treasury Shares Program

Healthcare

- Group insurance
- Year-round occupational health services
- Health checkup subsidies
- Hospitalization subsidies

Flexible Leave Policy

- Overtime multipliers during the Chinese New Year
- Paid sick leave
- Paid Family Care leave
- Paid leave for vaccination

The management of human rights issues

Object

Employees
(including migrant workers)

Method

- As part of the new employee orientation and training program, human rights advocacy is incorporated. In 2022, the human rights advocacy rate was 100%.
- Policy training is conducted for all employees through online statement reading annually. In 2022, the online statement reading completion rate was 93%.
- Strictly supervising both local and foreign intermediary agencies to ensure compliance with ethical recruitment practices and the implementation of the Zero Placement Fee for Migrant Workers.

Suppliers

Suppliers are required to follow the Responsible Business Alliance and conduct training on human rights issues.

The risk identification results for employees and suppliers in 2022

Category	Major Risk	Evaluation Method	Mitigation Actions
Employees	Workplace inclusivity	Survey on the ratios and the numbers of employees with disabilities, as well as the male-female ratio of employees	Continuously increasing the ratio of employees with disabilities and females in management
Suppliers	Prohibition of child labor, respect of freedom of association, anti-discrimination, forced labor, and Working hours and wages	On-site audit, and improvement report	Promote human rights issues to suppliers

Industry-Academia Collaboration Program

Since June 2018, MOLICEL has signed a 4-year industry-academia collaboration program and internship contract with the Department of Computer Science and Information Engineering at Far East University to increase the workforce and strengthen the partnership with the university. In 2022, a total of 8 students were employed, and 4 of them chose to become permanent employees after graduation.



SUMMARY REPORT

ESG 2022

High Power | Long Cycle Life | Wide Temperature Range.