

TCC Group

Investors' Conference

—
2022 Q3

 TCC

Service for Life



ANKH

means life

from Egyptian hieroglyphs

symbolizes air and water

the essential elements of life



OTCC



Global and Economic Instabilities Impacting All Creatures

Inflation

	2021/10	2022/10	Growth %
US	6.2%	7.7%	+24%
NYM Gasoline	205.7	252.6	+23%
EU	4.4%	10.9%	+148%
UK	4.2%	10.1%	+140%

Source: Bloomberg, unit for gasoline price: USD/Gallon

US Interest Rate

	2021/11	2022/11	Growth %
Fed Funds Rate	0.25%	4.00%	+1,500%
US Prime Rate	3.25%	7.00%	+115%
30-year Mortgage Rate	3.13%	7.22%	+131%

Source: Bloomberg



Global Economy Affects Everyone

USD Appreciation

	2021/10	2022/10	Depreciation
EUR	1.16	0.99	-15%
GBP	1.37	1.15	-16%
JPY	113.95	148.71	-31%
NTD	27.8	32.2	-16%

Source: Bloomberg

GDP

	2021	2022F	Growth %
US	5.7%	1.6%	-4.1%
EU	5.4%	2.7%	-2.7%
UK	7.4%	3.6%	-3.8%
Japan	1.7%	1.7%	0%

Source: Bloomberg, IMF and Eurostat



Global Economy Affects Everyone

TCC's First Zero-Carbon Mine Demonstration Site



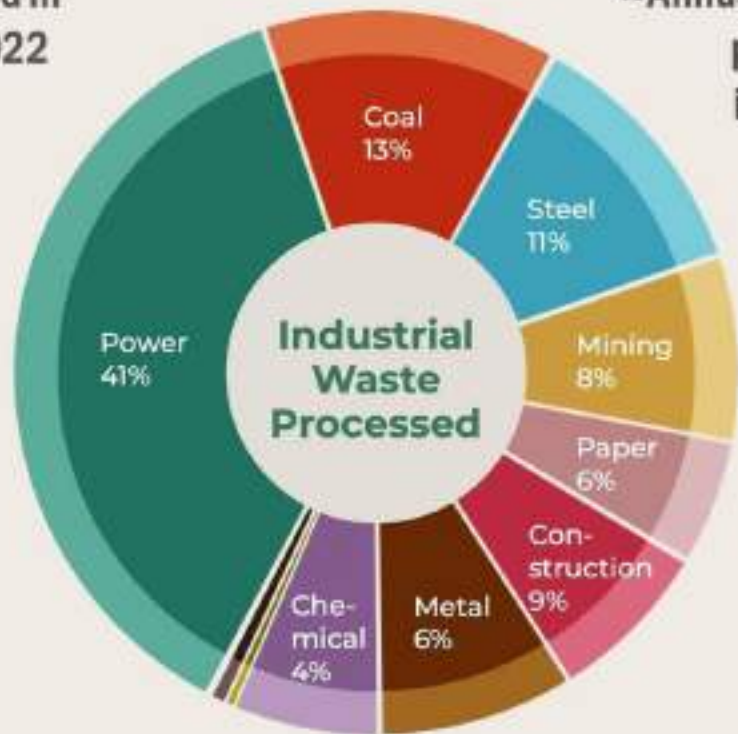


Reduce Damage On Earth

TCC Group is an “Urban Purifier”

~27M Tons

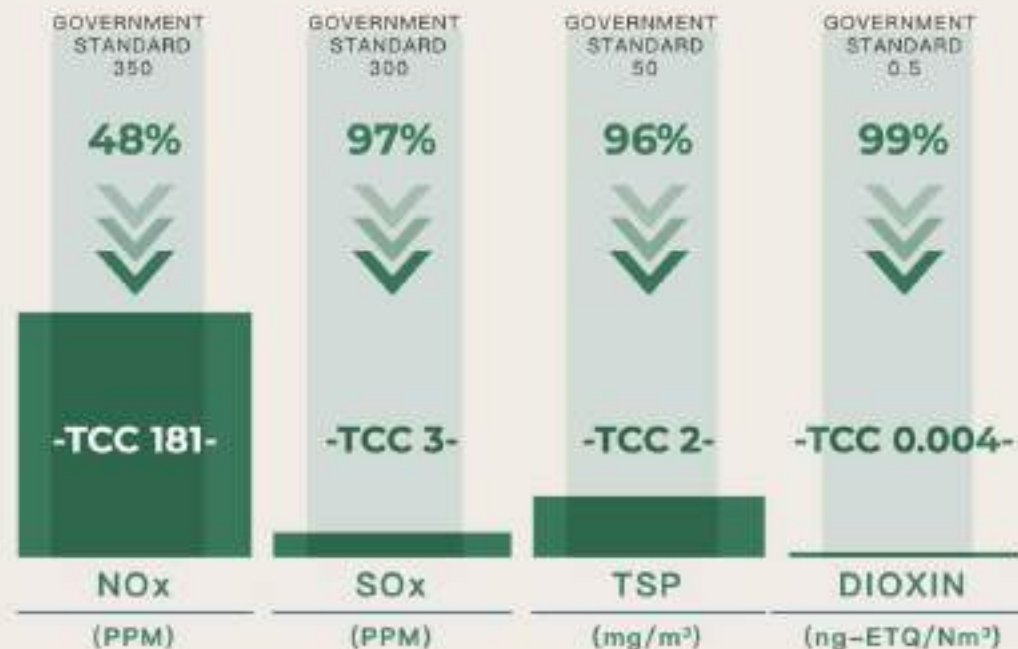
Processed in
2020-2022



75%

≈ Annual wastes
produced
in Taiwan

Emissions continue to be
far lower than government standards



TCC Group processed wastes:

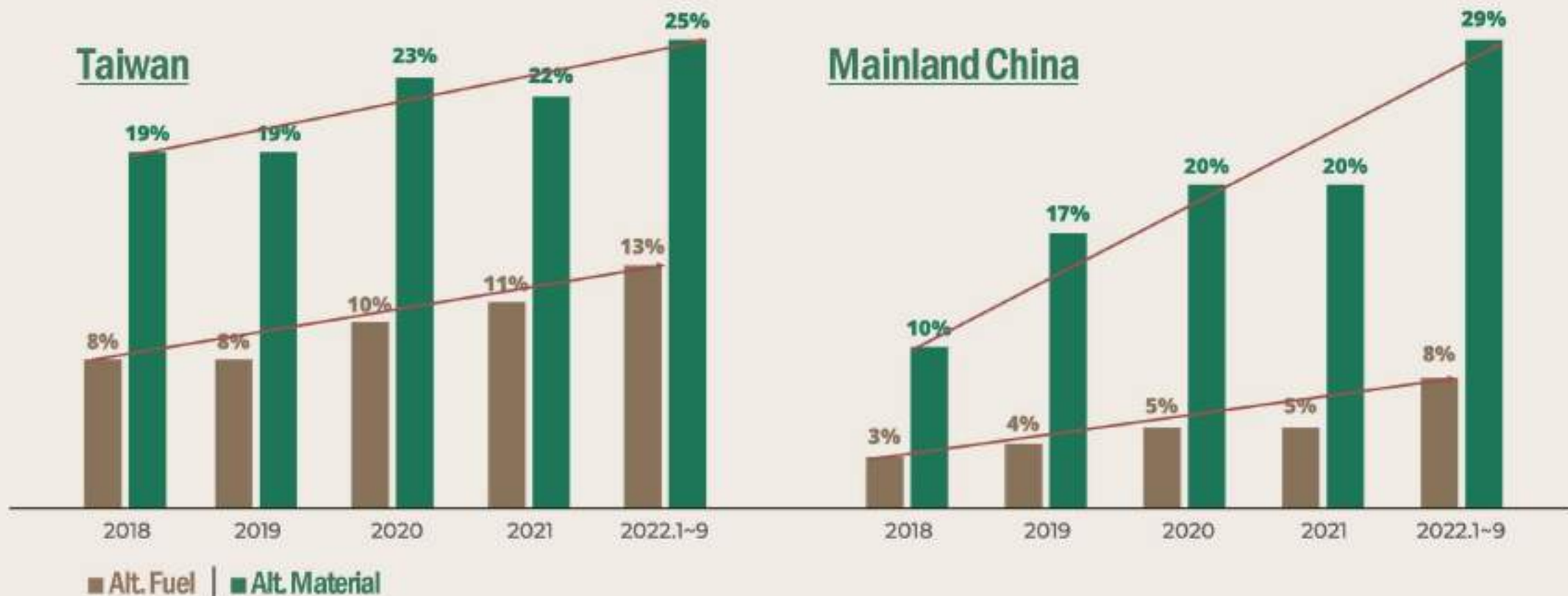
1. Incl. Taiwan, Mainland China and Ta-Ho Environment;

2. Average volume of 2020-2022 Taiwan annual city and industrial wastes

Data source: EPA and related departments | Air emissions data: Taiwan 2022 Jan.-Sep. emissions



Cement Plants Increase Alt. Fuel and Material Use

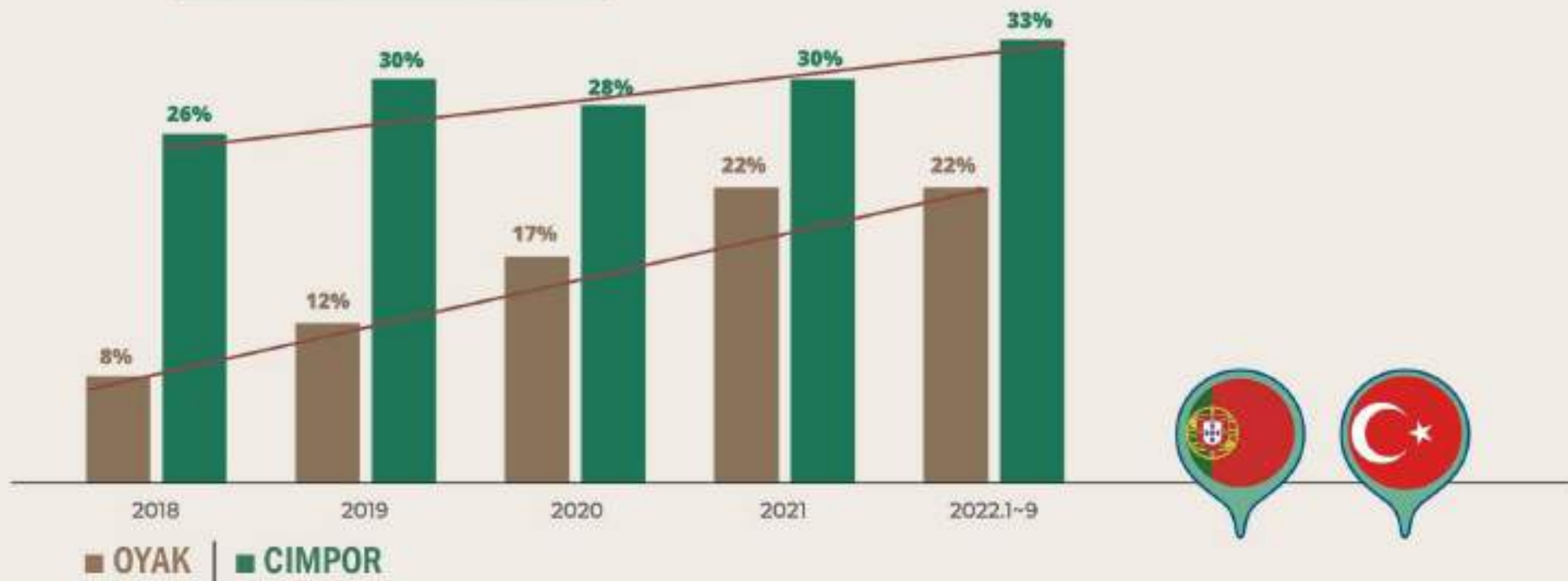


Note: ① Usage shall comply with local government's regulations; ② Taiwan and Mainland China alternative fuels include the alternative raw material with heat values (e.g. coal gangue); ③ In 2021, complying with the energy conservation policy in Mainland China, the adjustment of our production plan affected the usage ratio of alternative fuel and material.



Introduce Alt. Fuel Technology to OYAK & Cimpor

Alt. Fuel Heat Value %



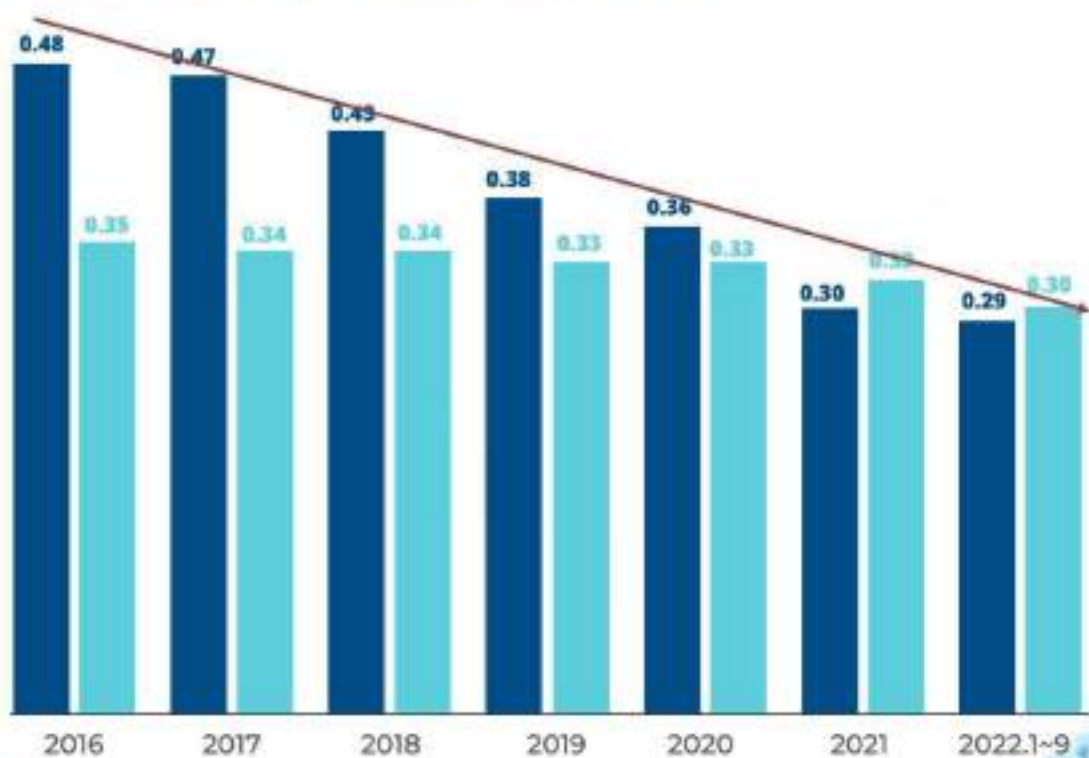
Source: Cimpor & OYAK



World's First Cement Company with ISO Water Resource Badges

Water Usage Intensity

Taiwan -38% | Mainland China -9%



■ Taiwan | ■ Mainland China

Unit: m³/Metric Ton of Cementitious Materials
Note: Water usage intensity decrease is 2021 vs. 2016 (base year)

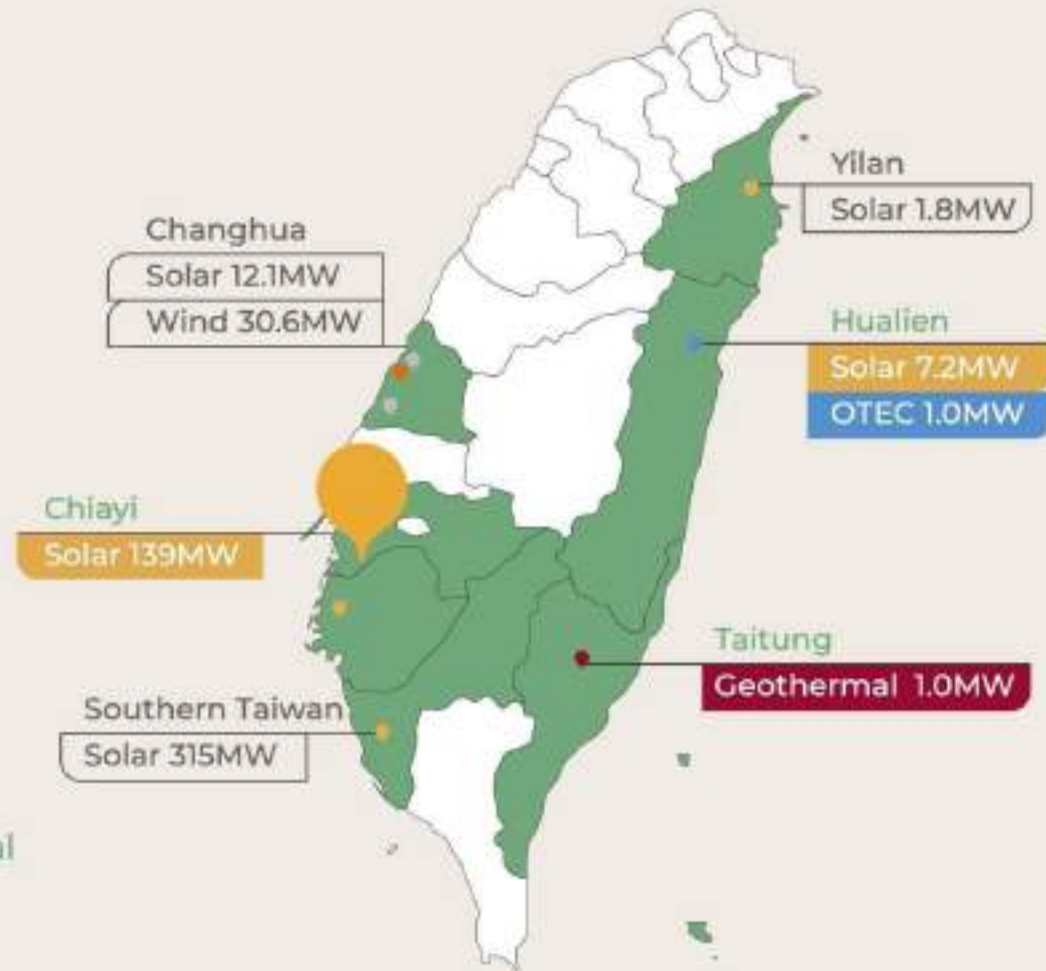
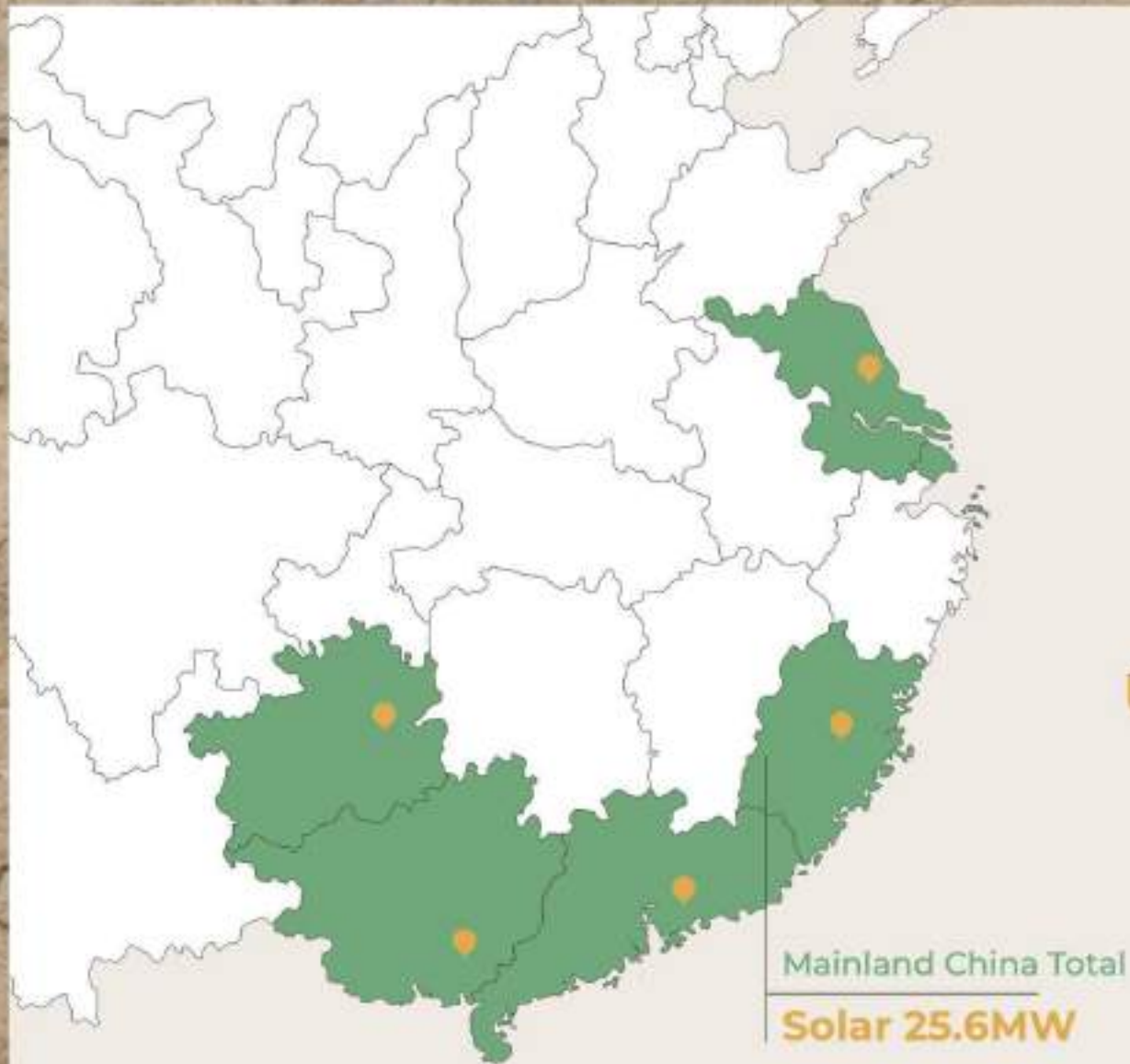


TCCTaiwan RMC Plants
Recycles 100% Waste Water



Renewables Investments

Target : ~600MW by 2025

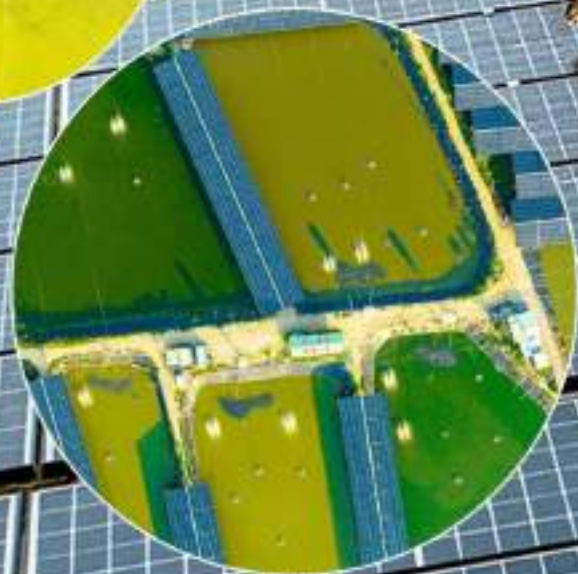




Renewables Investments

Oct. 2022

Taiwan's First Green Grid Connection from Fishery & Solar Symbiosis



43MW

Installation
Capacity

54 Million kWh

Power Generation
(annual)

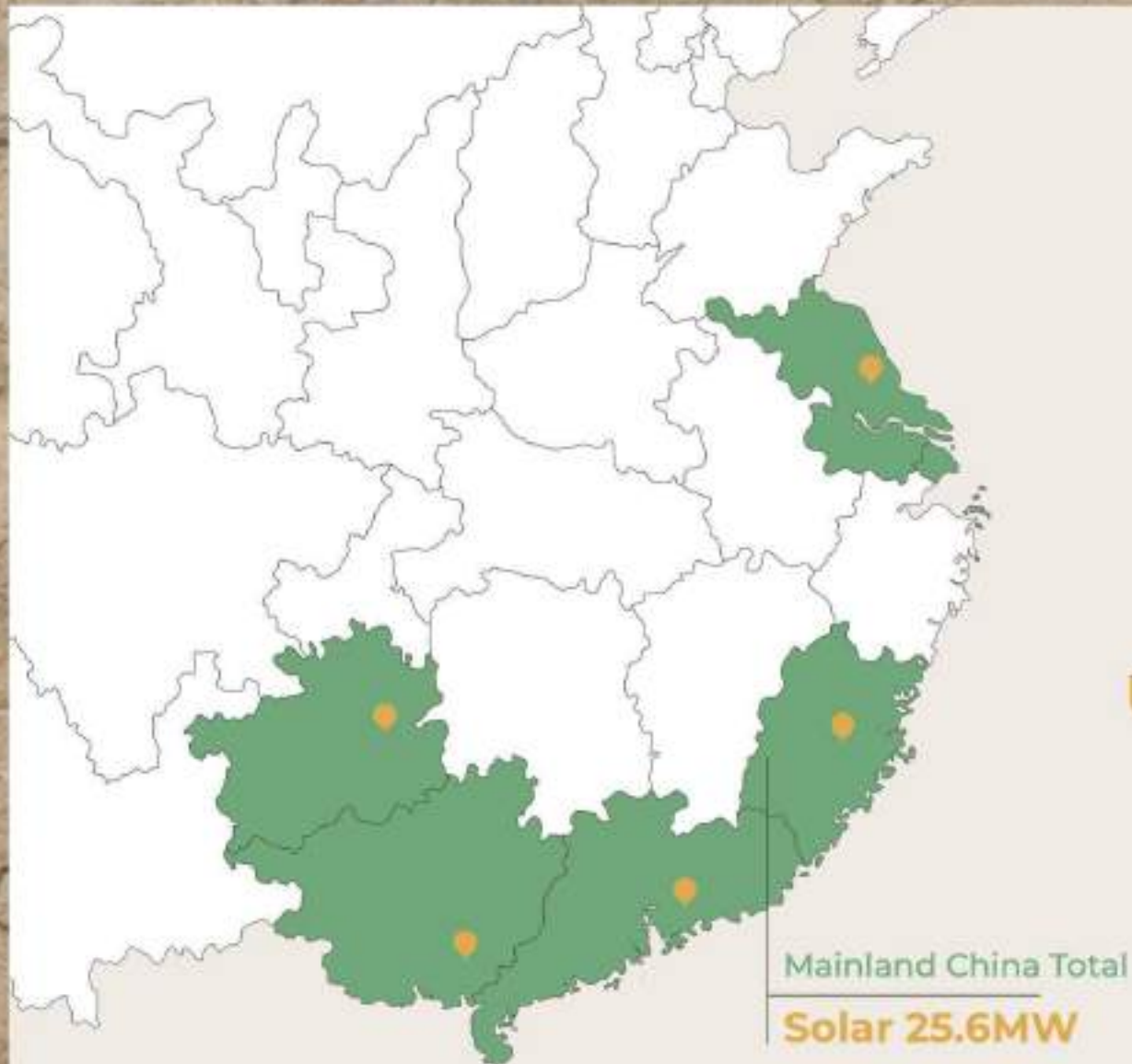
15,000
Households

Power Usage (annual)



Renewables Investments

Target : ~600MW by 2025





Renewables Investments



OTEC
Pending Approval



Hoping | Hualien



Geothermal
Drilling



Hongye | Taitung



Hualien Hoping 10MW BESS Project Near Completion



Hoping, Hualien: 30MW
Online on Sep. 27, biggest single site in TW

TaiPower's Spinning & Supplemental Reserve
Combines the composite mode of factory load reduction to provide demand response, with the ability to track the load and cooperate with TaiPower's dispatching requirements

E-One Moli: 1MW online on APR. 11

TaiPower's Spinning & Supplemental Reserve

Hoping, Hualien: 10MW
Completion in 2023

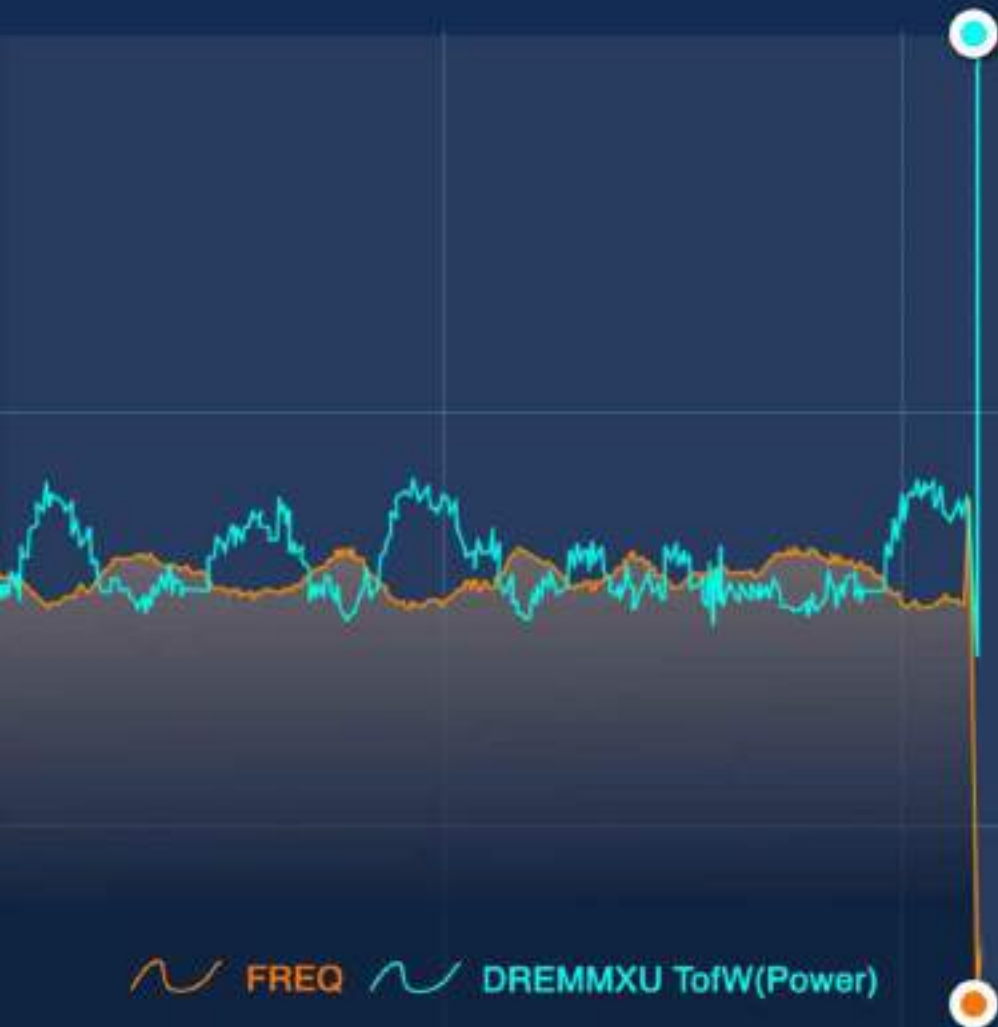
Enhanced Dynamic Regulation (E-dReg)
The grid-connected ESS can provide fast response and peak and off-peak power transfer to enhance grid flexibility

Changbin: 5MW AFC online in 2021

Dynamic Regulation (dReg)
Has two-way frequency adjustment capability

TCC's First Self-Made High Performance AFC

2022.03.03 Power Outage Incident



Blue: Frequency Adjustment

09:16:24 TCC's AFC detected unstable power supply and provided frequency stabilization power within 0.1 second.

Orange: Grid Frequency

09:16:24 Equipment breakdown in one power plant caused grid frequency to drop to 58.81 Hz.

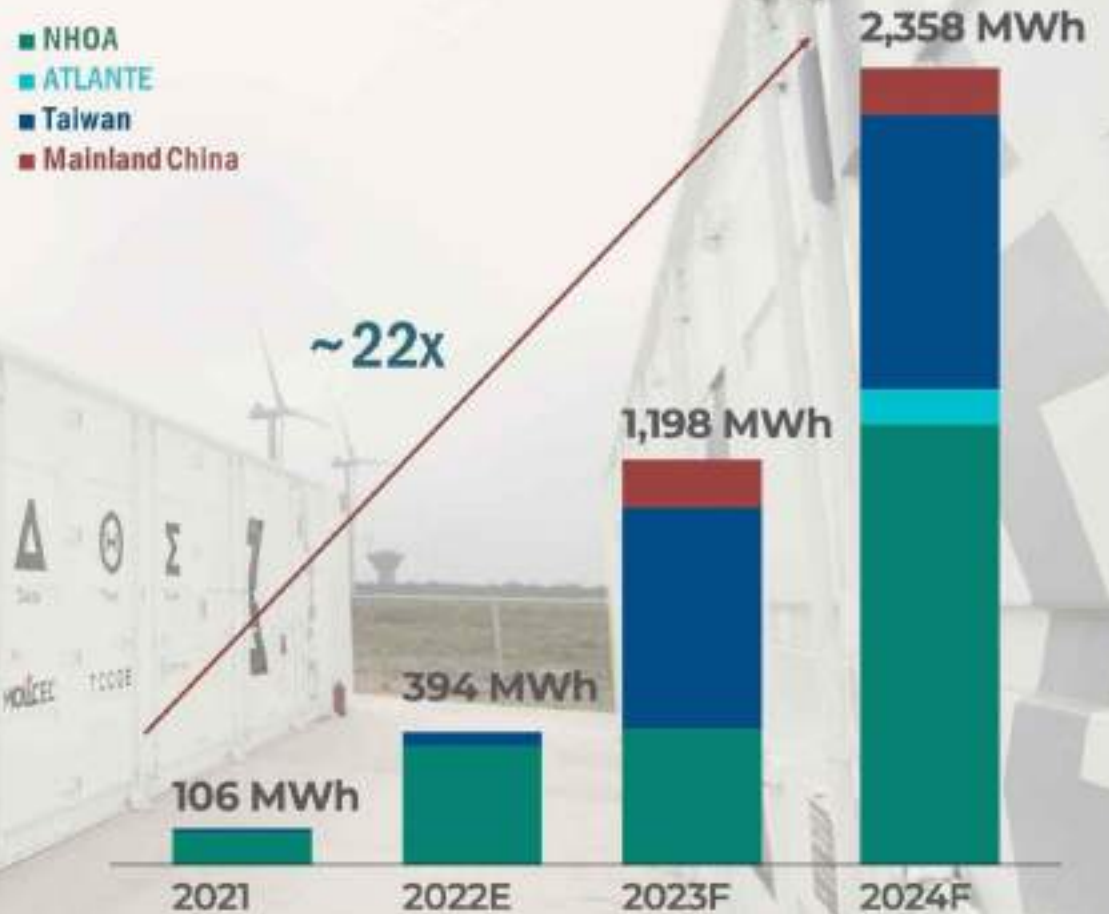


Expand ESS Across Four Continents

Installation Timeline



TCC Group | Global ESS Installations





100% Self-Made Fire Resistant Low Carbon

UHPC ESS Cabinets

Applied for patents

World's First Commercial Ultra-High Performance Concrete (UHPC) ESS Cabinet

 **REDUCE CO₂**

50% less CO₂
than metal cabinets

 **FIRE RESISTANT**

Withstand internal
temperature of
1,000°C for 2 hours



 **PRESSURE
RESISTANT**

Compressive strength
over 17,000psi

 **WEATHER
RESISTANT**

Unaffected by external
weather conditions

UHPC Fire-Resistance Test





Molice Kaohsiung Super Battery Plant

1H23 Pilot Production



e-Racecar

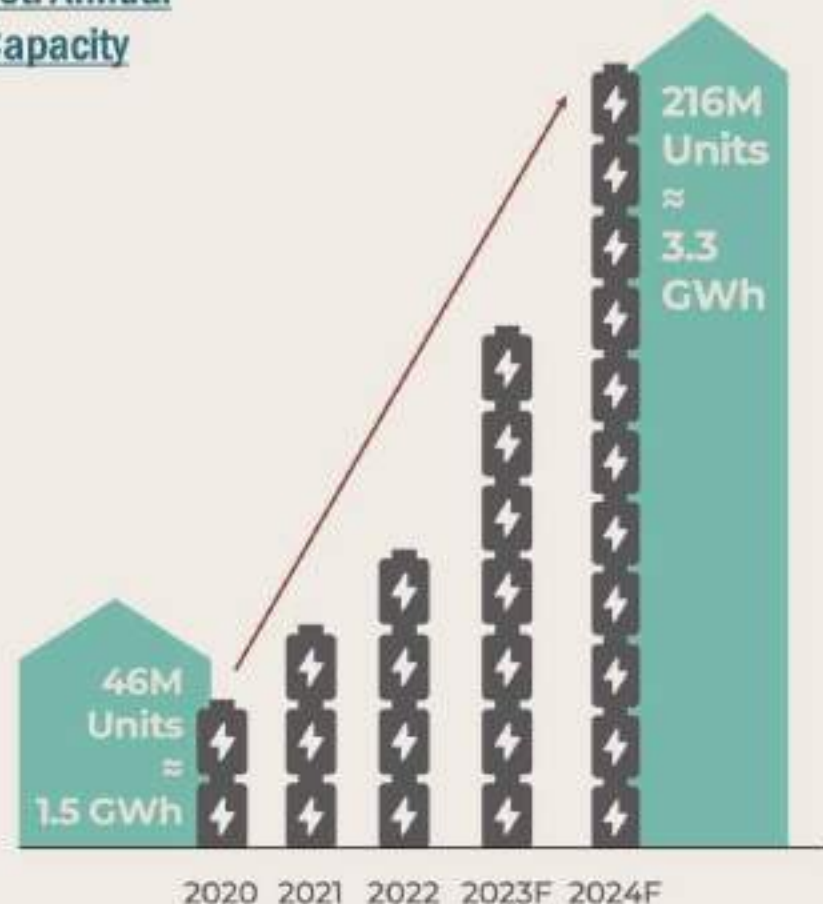
—
Won 1st place in
UK GoodWood Race
using Molice batteries



eVTOL

—
Using Molice batteries
for enhanced endurance
and performance with
zero carbon emissions

Est. Annual Capacity





Mainland China & International Coal Price Hike





Mainland China Cement Price Hike <

Fuel Cost Hike



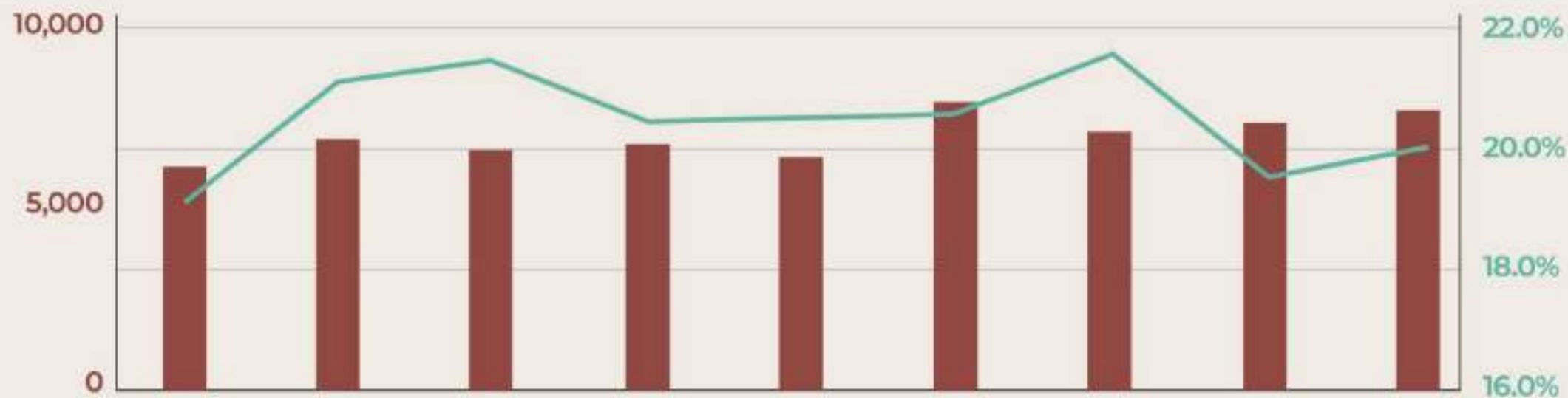
	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22
Sales Volume (Mil. Ton)	15.4	17.0	11.3	14.2	13.4	10.0	8.5	9.3	10.9
Revenue (RMB Mil.)	4,363	5,015	3,225	4,451	3,957	4,566	2,889	2,905	2,875
GP/Ton	96	100	66	97	58	168	34	20	-5
Operating Profit (RMB Mil.)	1,122	1,243	436	991	448	1,221	-8	-69	-311
Gross Margin %	33.8%	33.7%	23.2%	30.9%	19.7%	36.8%	9.9%	6.5%	-1.9%



Taiwan's Cement Profits Stable

■ Revenue | — Gross Margin %

NTD Mil.



	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22
Revenue	6,039	6,969	6,622	6,801	6,450	7,991	7,123	7,351	7,730
Gross Margin %	18.4%	21.2%	21.5%	20.3%	20.3%	20.5%	21.6%	19.6%	20.0%

Gross Margin % = Gross Margin/Revenue

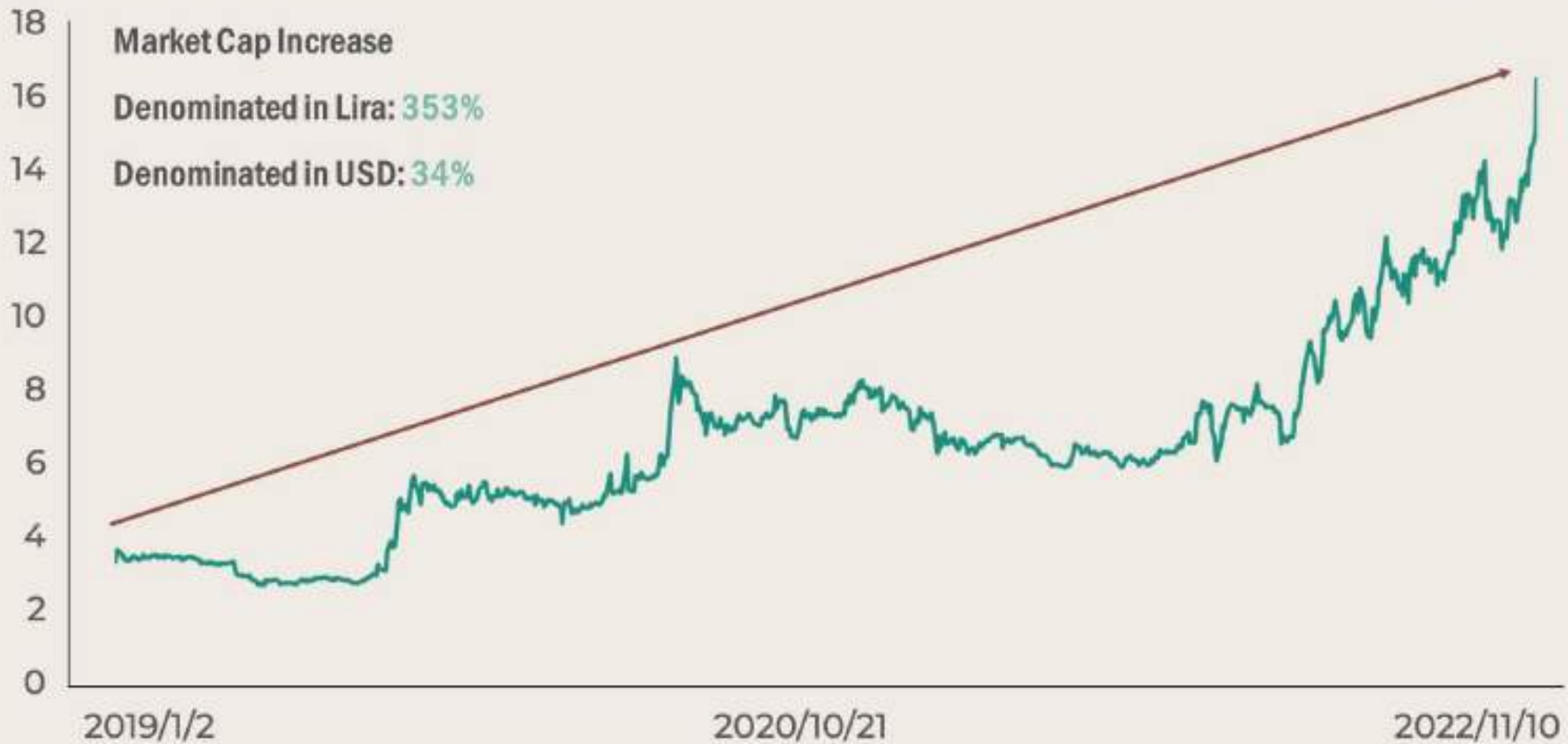
Note : Gross margin includes cement and RMC, due to different sales unit, no profit per unit provided



TCC-Owned OYAK Shares

Market Cap Catapulted

Turkish Lira



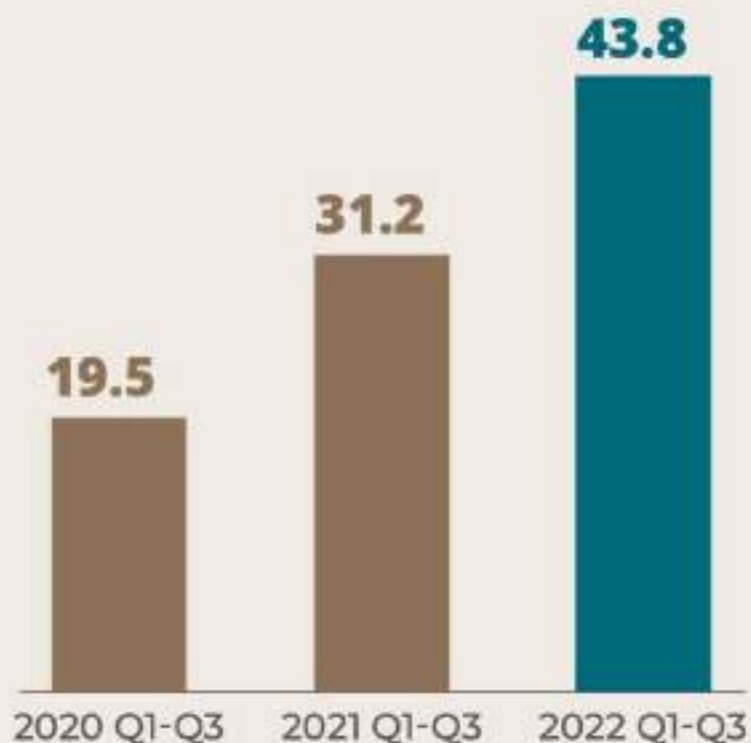
Note: source from Bloomberg (ticker: OYAKC TL, USD exchange 2022/11/10 rate)



Turkey and Portugal Cement Investments

Contribution Growth

Net Profits(TCC Share)



USD MII.

Source: Bloomberg (USD net profits exchange rate used average rate at end of 3Q in 2019-2021)

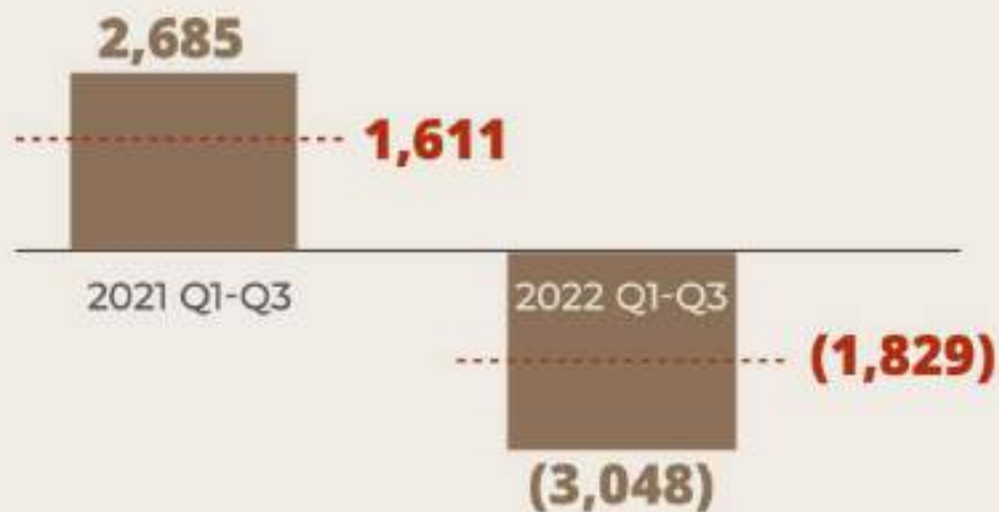
Turkey Cement Price (Domestic)



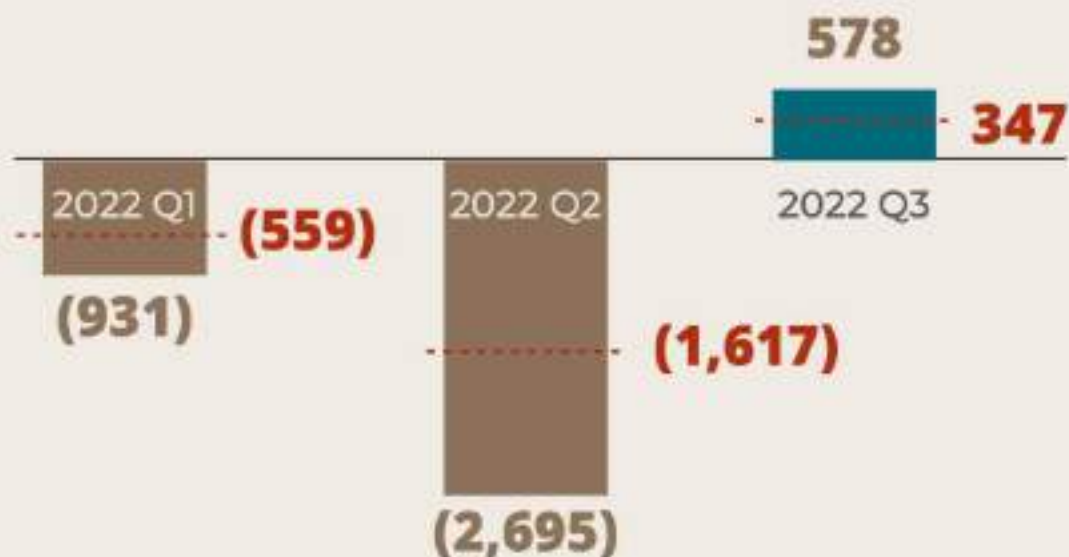


Hoping Power Turned Profitable in 3Q22

Net Profits



2022 Quarterly Net Profits



NTD MII.

■ Hoping Power Net Profits | ■ TCC's 60% Share



International coal price
grew 3X YoY

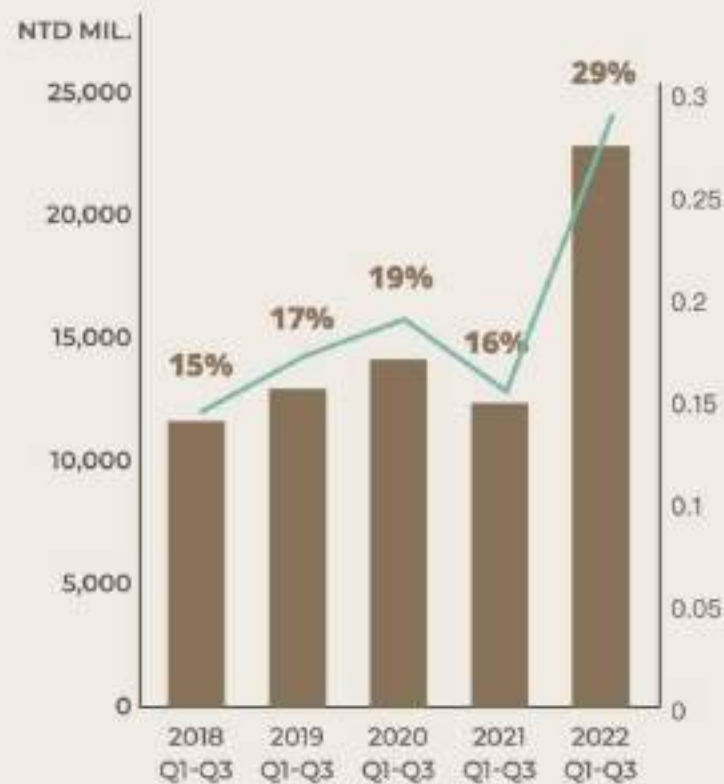


Enhanced environmental
protection and equipment safety
resulted in fewer working days



Service for Life with New Energy Transitions

TCC Group 2022Q1-Q3 Non-Cement Revenue Amount & Share



Established
TCC
Green Energy

2018

NHOA.TCC



Jul. Acquired NHOA shares

Aug. Expanded Molice investments

2021

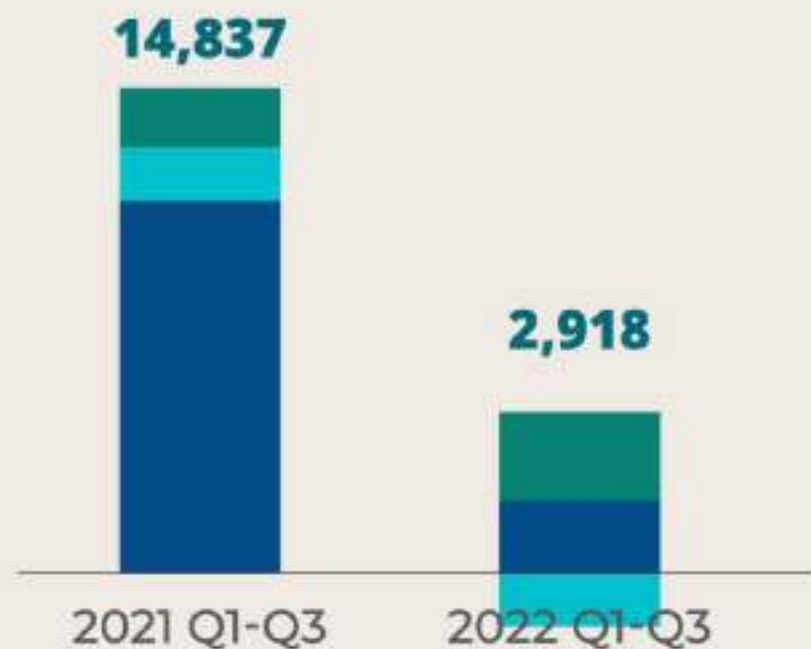




Net Profits Attributable to Parent Company

3Q22 Profits Rose QoQ

2021Q1-Q3 vs. 2022Q1-Q3
Net Profits by Segment



NTD MII.

■ Cement | ■ Electricity & Energy | ■ Others

2022 Quarterly Net Profits



NTD MII.



Actively Enhance Financial Structure

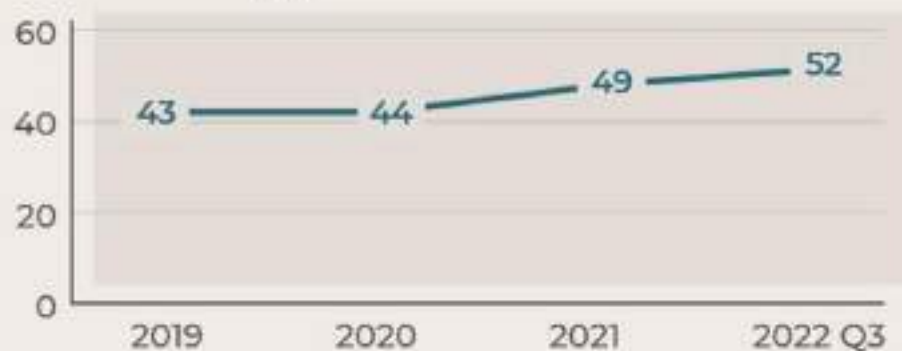
Type	Purpose	Date	Size
Domestic Corporate Bonds	Floating Rate → Fixed Rate	2021/8	NTD16.6B
		2022/6	NTD7.7B
ECB	Zero Coupon Rate	2021/12	USD800M
	Fixed Exchange Rate		
New Syndicated Loan	Short-term → Long-term	2022/3	NTD51.6B
GDR	Enhance financial structure	2022/10	USD425M
			Total NTD 115.4B

Note: Exchange rate based on 2022/10/31, source from Bloomberg

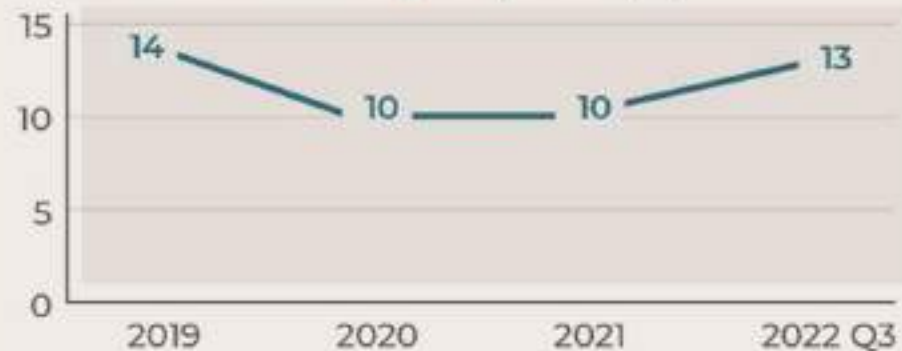


Financial Ratio

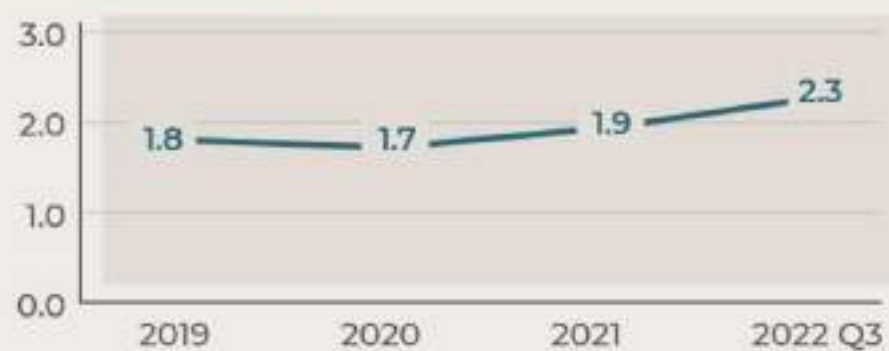
Debt Ratio (%)



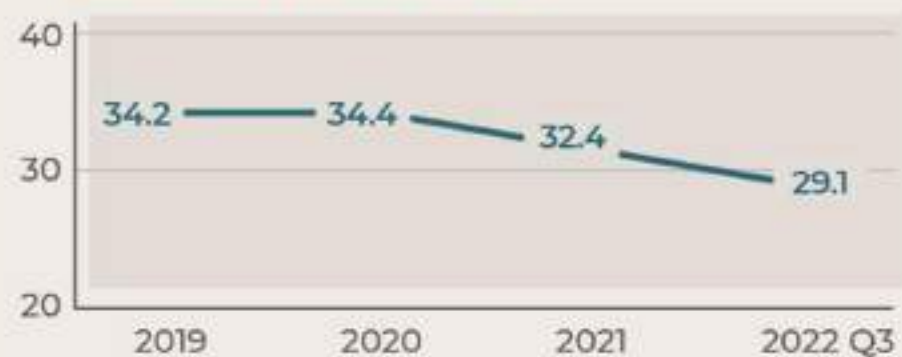
Net Interest-Bearing Debt/Asset (%)



Current Ratio



Book Value per Share (NTD)



Note: Financial ratios above do not include the NTD13.54 billion of GDR issued on Oct. 3, 2022.

ESTABLISHED OFFICE OF SUSTAINABILITY AND RESPONSIBILITY

INTEGRATING GROUP RESOURCES TO PROMOTE SUSTAINABILITY

Europe HQ
in Amsterdam

Group HQ

NHQA

NHQA
ENERGY

atlante

eSolutions
Free2move

poTCC

NHQA.TCC

MOLICEL®

TCGG

MOJA
QUANTUM
ENERGY



BIODIVERSITY

— LAUNCH HOPING ECO ARK PROJECT IN 2023

Setting up a semi-enclosed ecosystem experiment base in Hoping Industrial Park to study its countless and rich biological density and diversity, including plants, animals and micro-organisms...etc.

In combating extreme climate changes, we need to conduct a simulation by using a semi-enclosed ecosystem with a large amount of different species in the same area and study their growth and changes.

Once the project kicks off, it will be one of the few woodland ecosystem experiment bases set up at a low altitude site.



揀拾垃圾後上傳照片



#TrashTag

EARTH HELPER



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



EARTH HELPER Initiative Kickstart Sustainable Lifestyle

12.8 Ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.





International Recognitions

Becoming BEST EARTH HELPER

2022 DJSI
Top 5 in Global Building
Material Industry



Dow Jones
Sustainability Indexes

MSCI ESG Ratings
2019-2021 Upgraded
for three consecutive years

MSCI
ESG RATINGS



CCC B BB **BBB** A AA AAA

Sustainalytics
ESG



Leadership
Status (A)
in Climate
Change SER

Leadership
Status (A-)
in CDP Water



前驅者

Pace-setter

Top 10
Company
in Sustainable
Development
in Greater
China



ESG Investing

Nominated for Best
Sustainability Reporting



FTSE4Good
TIP Taiwan ESG Index



FTSE4Good TIP Taiwan ESG Index
TIP Taiwan Environmental
Sustainability Index
TIP Customized Taiwan Dividend
Highlight Index



Initiative Participations

Becoming BEST EARTH HELPER



2020-2022
Re-elected
as Traditional
Industry Top Prize
by GlobalView



3rd Place
in Common-
Wealth
Magazine
Large-size
Enterprise

Re-elected
in 2022



ER Asia
BEST COMPANIES
TO WORK FOR
IN ASIA 2022

Innovative Enterprise
in Literature & Leisure

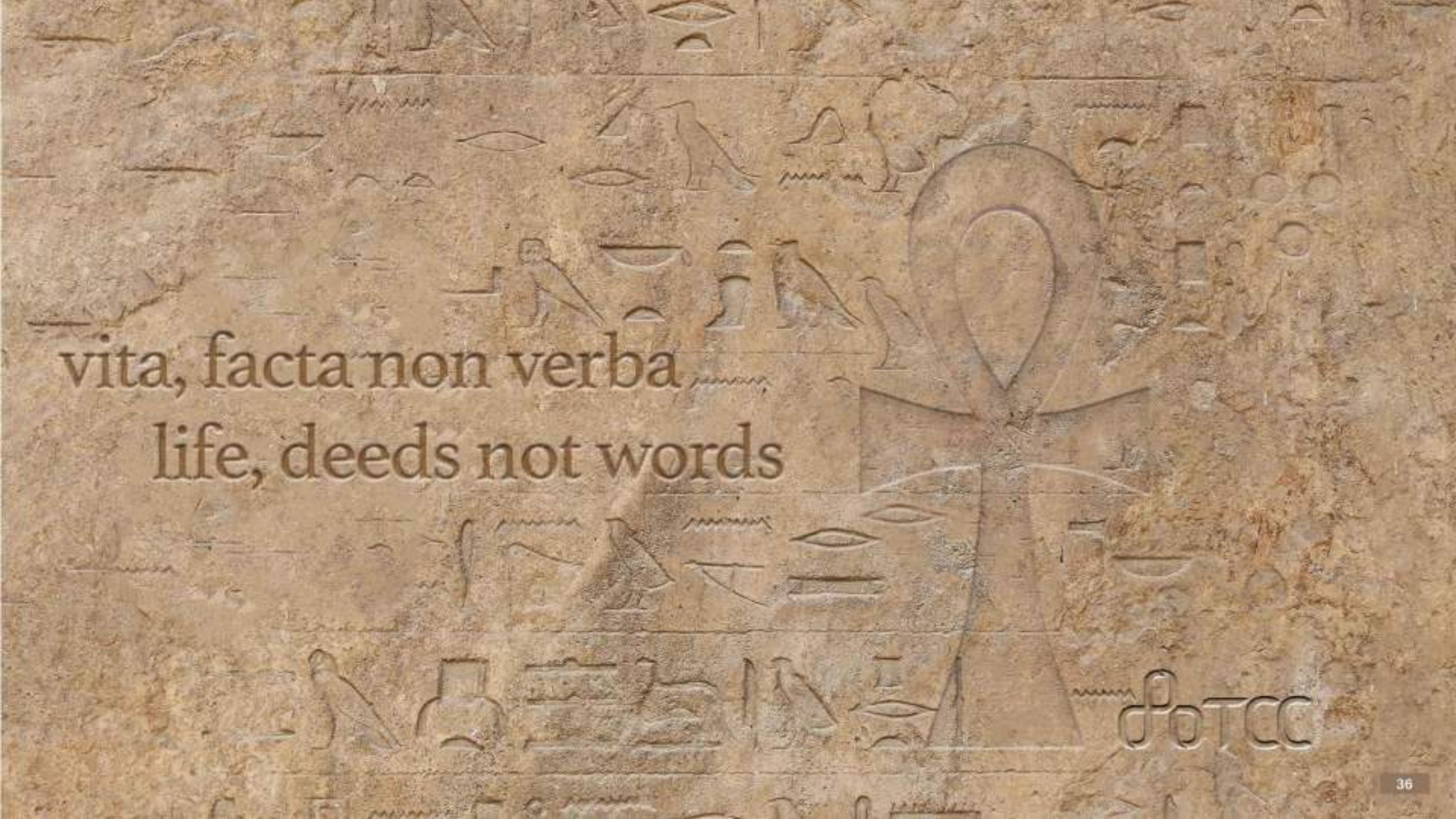
經濟部國家產業創新獎
Ministry of Economic Affairs, R.O.C.
National Industrial Innovation Award

2022 Sports Enterprise
Certification awarded
by MOE



Top 25 International Taiwanese Brands



The background is a textured, light-brown surface covered in numerous small, faint hieroglyphs. A large, prominent hieroglyphic figure is carved into the center-right, featuring a large oval head with a teardrop shape inside, and a body with a cross-like structure. The text is overlaid on the left side of this figure.

vita, facta non verba
life, deeds not words

DOTCC

DISCLAIMER

The forward-looking statements contained in this presentation are subject to risks and uncertainties and actual results may differ materially from those expressed or implied in these forward-looking statements.

Taiwan Cement Corporation makes no representation or warranty as to the accuracy or completeness of these forward-looking statements and nor does Taiwan Cement Corporation undertake any obligation to update any forward-looking statements, whether as a result of new information or future events.



LEADING
THE
ENERGY
TRANSITION



WHAT ENERGY TRANSITION STANDS FOR

GLOBAL TARGETS



+ **2** °C

MAXIMUM GLOBAL WARMING vs. PRE-INDUSTRIAL ERA

0 g

CO₂ EMISSIONS BY 2050



FIT FOR

- **55** %

CO₂ EMISSION REDUCTION BY 2030 COMPARED TO 1990

The Economist

Race and collapse
What will take us?
Big tech falls to earth
China's Taiwan-ready generals

SAY GOODBYE TO 1.5°C

Why climate policy is off target



+ **1.2** °C

**GLOBAL WARMING
IN 2020**

COMPARED TO
PRE-INDUSTRIAL LEVELS

NHQA

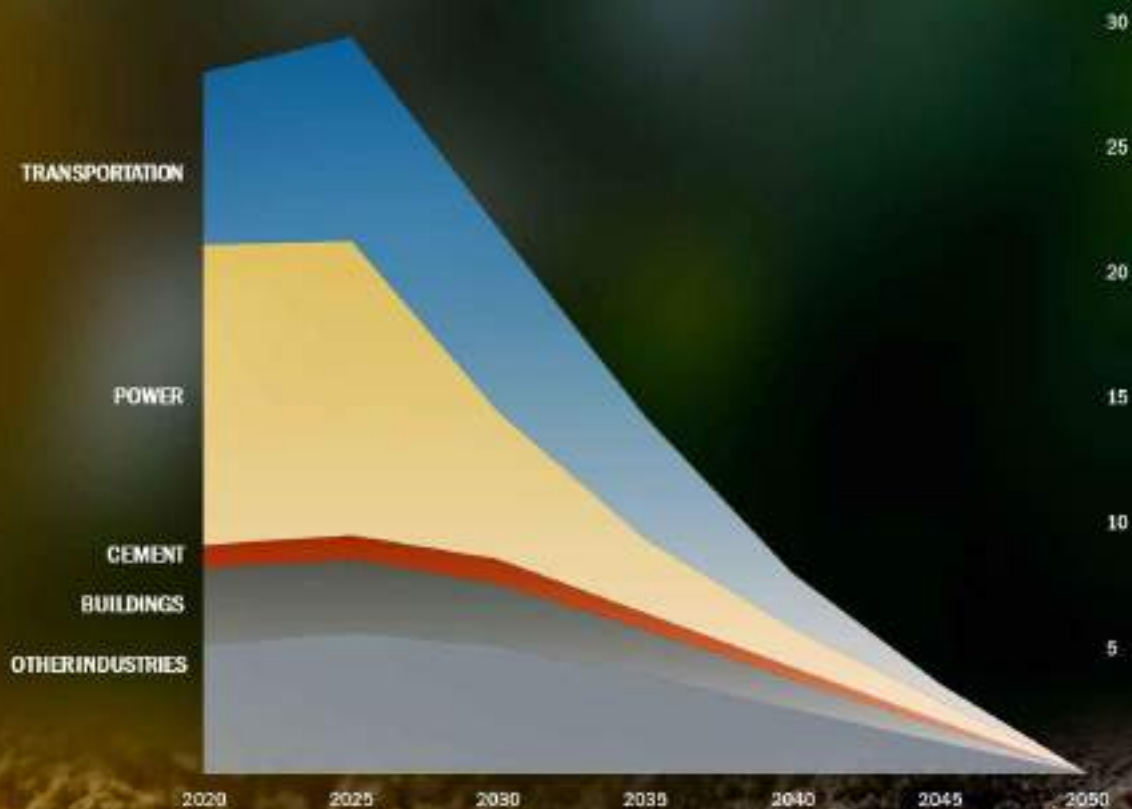
DRIVERS OF THE ENERGY TRANSITION



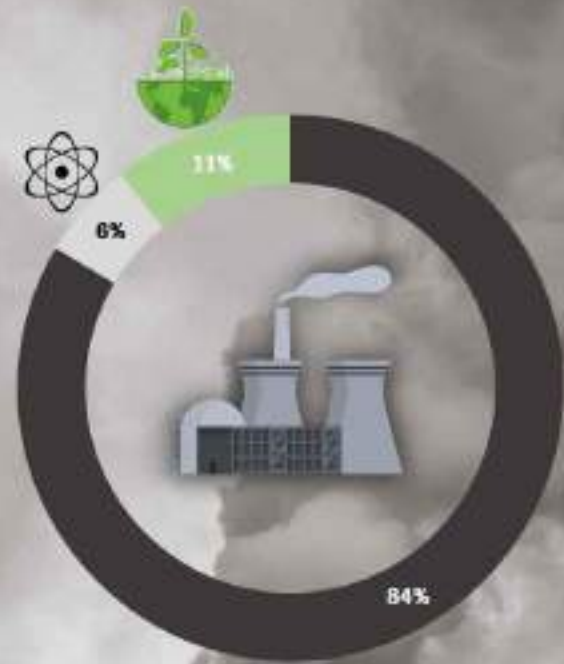
Direct CO₂

EMISSIONS BY INDUSTRY

BnTon CO₂



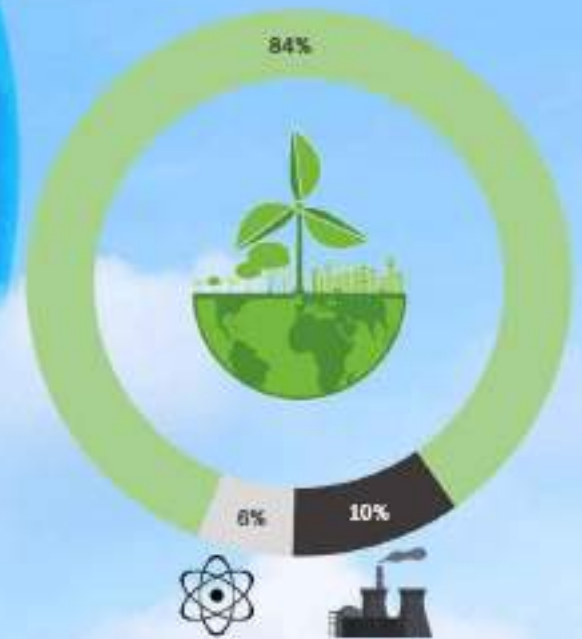
MASSIVE SHIFT IN POWER GENERATION MIX



20
21



20
50



NHQA

~ **12** %

YEARLY HOUR EQUIVALENT
OF PRODUCTION
IN CENTRAL EUROPE

**SUN
IS NOT
SHINING AT
NIGHT**

NHQA

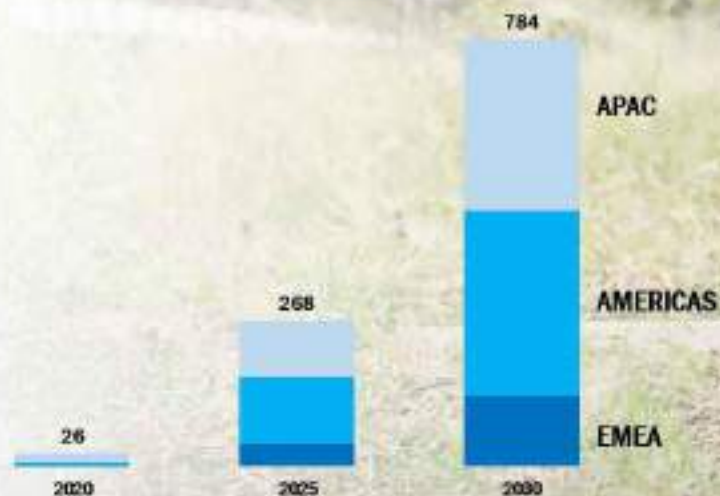
GRID STABILITY AT CENTER STAGE

NHQA

ENERGY STORAGE THE GAME CHANGER

CUMULATIVE CAPACITY BY REGION

GWh, excluding residential



NHQA



EU TRANSPORT EMISSIONS

70%

14%

1%

NHQA

**CAR DRIVERS
DO NOT WANT TO
CHANGE THEIR
CUSTOMER JOURNEY**

NHQA

REQUIRED EU GRID EXPANSION

TARGET FOR AVAILABLE
PUBLIC CHARGING POWER
IN EU

Peak Power
Demand

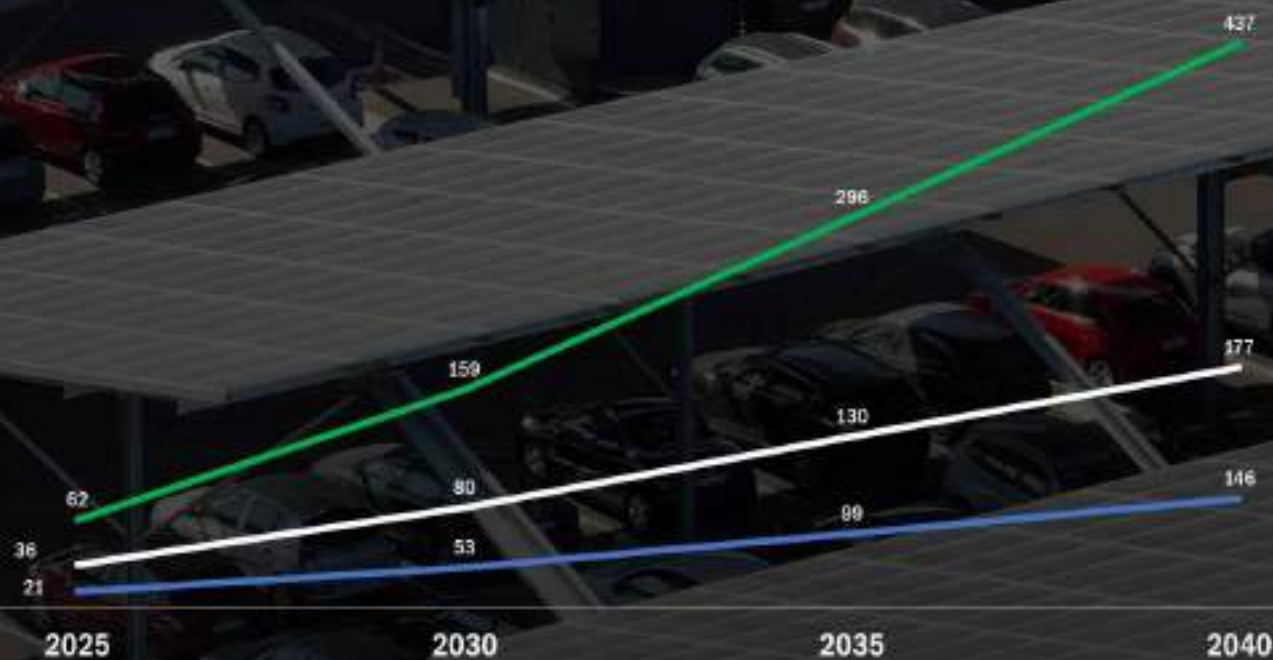
55.0



2021

REAL NEED BASED ON
acea ELABORATION

Bloomberg
NEW ENERGY FINANCE



ENERGY STORAGE AS THE ONLY WAY TO SECURE SUSTAINABLE FASTCHARGING



AC-DC



GRID POWER ON
CHARGING POWER

100%



NHQA



DC-DC



GRID POWER ON
CHARGING POWER

25%

HOW WE PLAY



**ENERGY
STORAGE SYSTEMS**
COUPLED WITH RENEWABLES

TO SECURE AFFORDABLE
24/7 CLEAN POWER

NHQA



**EV FAST AND ULTRA-FAST
CHARGING NETWORK**
COUPLED WITH STORAGE

TO SECURE SUSTAINABLE FASTCHARGING
EXPERIENCE

GLOBAL PLAY



ITALY, 0.1MW



SPAIN, 22MW



ITALY, 7.2MW



GREECE, 1MW



ITALY, 4MW



ITALY, 0.8MW



ITALY, 70MW



SINGAPORE, 15MW



MALDIVES, 10MW



TAIWAN, 310MW



PERU, 30MW



AUSTRALIA, 12MW



NEW CALEDONIA, 15MW



USA, 2MW



EAST AFRICA, 22MW



SOMALILAND, 10.2MW



CHILE, 1MW



MEXICO, 23MWp/5MW



AUSTRALIA, 200MW

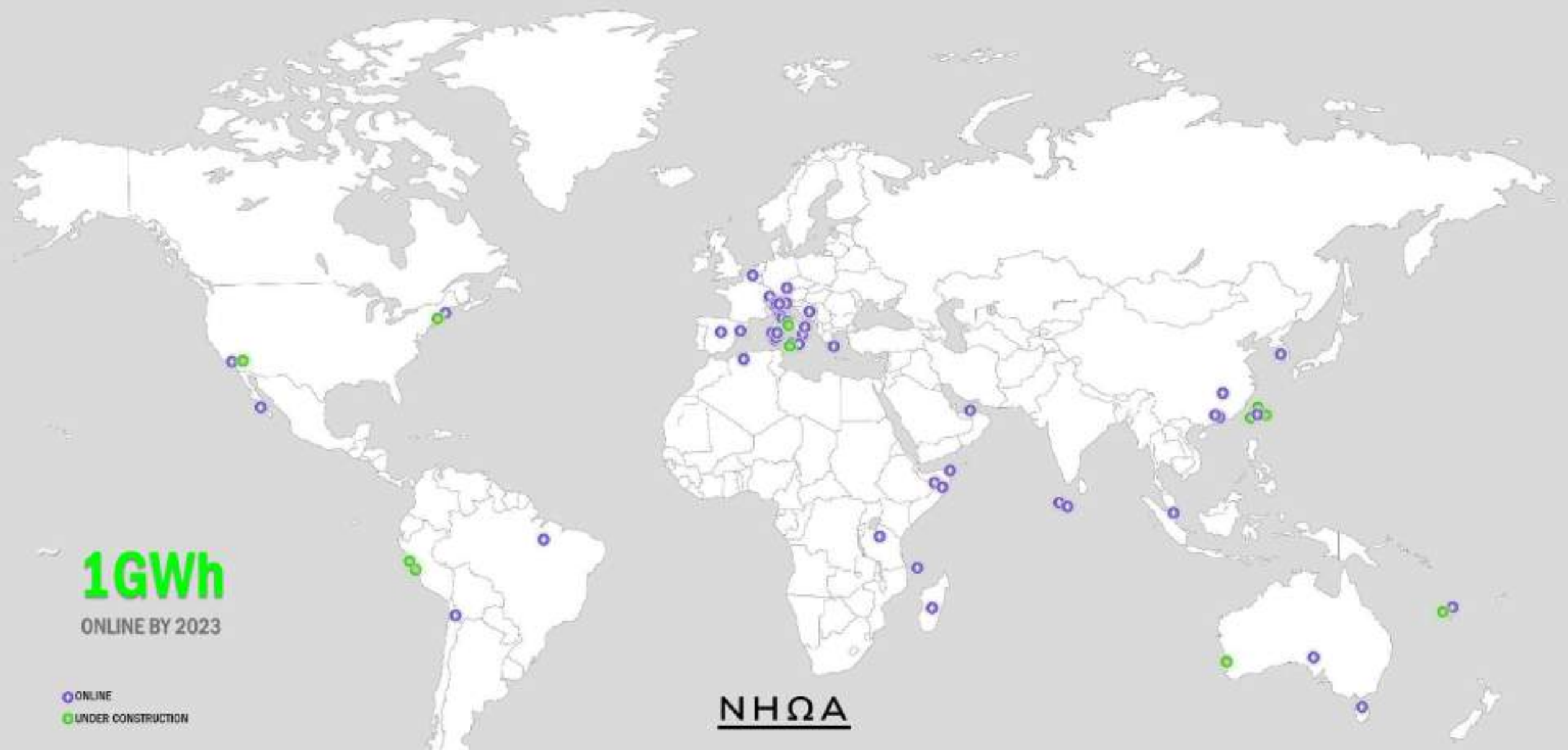


TAIWAN, 110MW



TASMANIA, 3MW

1GWh ONLINE & UNDER CONSTRUCTION



1GWh

ONLINE BY 2023

- ONLINE
- UNDER CONSTRUCTION

TODAY

LEADING ENERGY STORAGE
SYSTEM INTEGRATOR

WORLDWIDE



eSolutions

EU & US PLAY

JOINT VENTURE
WITH

STELLANTIS

21%

EUROPEAN
MARKET SHARE

NHQA

LARGEST
eMOBILITY HUB V2G
WORLDWIDE

UNIQUE TRACK RECORD



25

ENERGY
CAPACITY

MWh

550+

V2G FASTCHARGING
POINTS

STELLANTIS



NHQA

SOUTHERN EUROPE PLAY

2025

2030

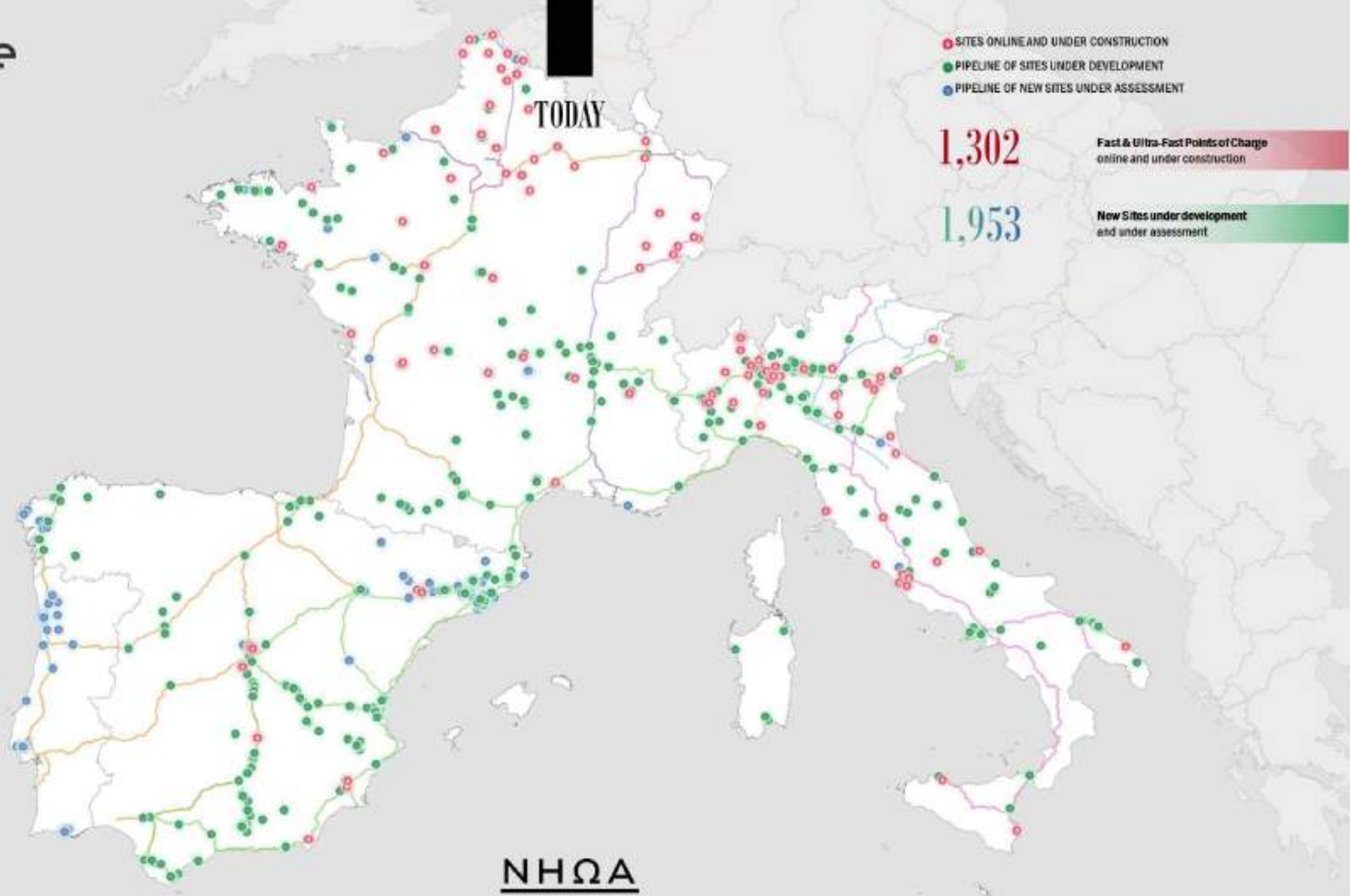
5,000
FASTCHARGING
POINTS

1,500
LOCATIONS

35,000
FASTCHARGING
POINTS

5,000
LOCATIONS

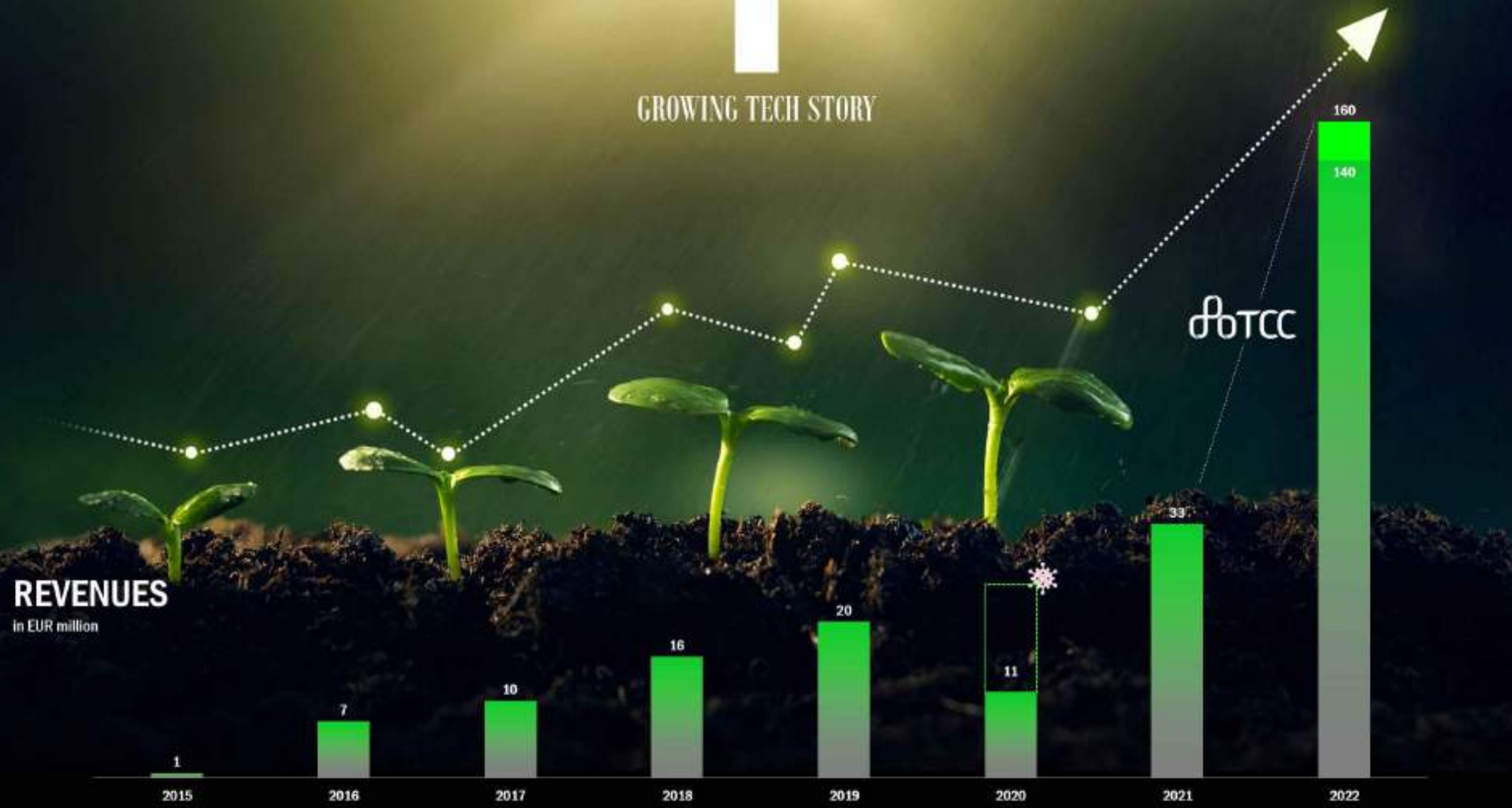




GROWING TECH STORY

REVENUES

in EUR million



NHOA

Note: NHOA is a French listed company, and the information contained in this page has been disclosed to the public previously subject to local listing rules.

Source: Company Filings

CLEAR OUTLOOK

REVENUES

in EUR million



EBITDA

BREAKEVEN
NHQA ENERGY eSolutions

~ 10%

~ 15%

~ 50%

NHQA

Note: NHQA is a French listed company, and the information contained in this page has been disclosed to the public previously subject to local listing rules.



IS THAT ALL?

Get ready
for a new
electric era.



NHQA

SAFE HARBOR STATEMENT

This document has been prepared by NHOA S.A. (the "Group") and contains forward-looking statements. In particular, statements regarding future financial performance and the Group's expectations as to the achievement of certain targeted metrics, including revenues, EBITDA, capital investments, conversion rates, pipeline, manufacturing capacity, installed base, life-time value, utilization rate, market share, profitability, research and development costs and other expenses at any future date or for any future period are forward-looking statements. These statements may include terms such as "may", "will", "expect", "could", "should", "intend", "estimate", "anticipate", "believe", "remain", "on track", "design", "target", "objective", "goal", "forecast", "projection", "ambition", "outlook", "prospects", "plan", "guidance", or similar terms. Forward-looking statements are not guarantees of future performance. Rather, they are based on the Group's state of knowledge and reasonable expectations at the date of publication of this document about future events which are by their nature, subject to inherent risks and uncertainties. They relate to events and depend on circumstances that may or may not occur or exist in the future and, as such, undue reliance should not be placed on them.

Actual results may differ materially from those expressed in forward-looking statements as a result of a variety of factors, including: the impact of the COVID-19 pandemic; disruptions arising from political, social and economic instability; political and civil unrest; earthquakes or other disasters; changes in local economic and political conditions; changes in trade policy and the imposition of global and regional tariffs or tariffs targeted to the automotive industry; the enactment of tax reforms or other changes in tax laws and regulations. The ability of the Group to launch new innovative and attractive eMobility products and storage solutions to award tender processes; its ability to develop, manufacture, certify under the specific local market regulations and sell storage solutions and eMobility products with advanced features including competitive electronics and batteries on which the Group is heavily reliant on third party suppliers; changes in the global financial markets, general economic environment and changes in demand for electric mobility and automotive products, which is subject to cyclicity. The Group's ability to expand certain of its products globally and in particular in the new targeted markets; various types of claims, lawsuits, governmental investigations and other contingencies, related to product liability, warranty and environment; material operating expenditures in relation to compliance with environmental, health and safety regulations; the intense level of competition in the storage and electric mobility industry which may increase due to consolidation; exposure to shortfalls in the funding of the Group's defined benefit pension plans; the ability to provide or arrange for access to adequate financing for retail customers and associated risks related to the establishment and operations of financial partners; the ability to access funding to execute the Group's Masterplan and Strategic Ambitions and improve their businesses, financial condition and results of operations; the ability to hire and retain several qualified and properly skilled human resources and to organize and manage a more complex Group's structure and organization; a significant malfunction, disruption or security breach compromising information technology systems or the electronic control systems contained in the Group's products and solutions; the Group's ability to realize benefits from joint venture arrangements, particularly with Stellantis; risks associated with our relationships with employees, dealers and suppliers; increases in costs, disruptions of supply or shortages of raw materials, parts, components and systems used in the Group's products and solutions, particularly batteries; developments in labor and industrial relations and developments in applicable labor laws; exchange rate fluctuations, interest rate changes, credit risk and other market risks; the risk that the operations of Free2Move eSolutions S.p.A. and the expectations of Taiwan Cement Corporation will not be integrated successfully and other risks and uncertainties including but not limited those explained or identified in the public documents filed by the Group with the French Financial Markets Authority (Autorité des Marchés Financiers, AMF), including those listed in the "Risk Factors" section of the Universal Registration Document filed with the AMF on 7 April 2021 (under number D.21-0273).

Any forward-looking statements contained in this document speak only as of the date of this document and the Group disclaims any obligation to update or revise publicly forward-looking statements. The Group does not have the obligation and undertakes no obligation to update or revise any of the forward-looking statements.