

TCC 3Q21 Investors' Conference Highlights

Introduction

TCC understands the importance of carbon dioxide reduction to the world and to the manufacturing sector. As a manufacturer that emits carbon dioxide, TCC cannot hide or shy away from the responsibility, we must turn ambitions into actions and that is what we have been doing for the past few years.

We live in a world of carbon where everything we use to maintain a modernized life emits carbon dioxide including our mobile phones, air conditioning, lights, notebooks and cars. To successfully limit climate change to 1.5 degrees Celsius as what COP26 was aiming for, every single one of us needs to do more.

TCC is doing and is aiming to do more.

Roadmap to 2050 Carbon Neutrality

For our industrial sector, we are already using alternative material, fuel and equipment enhancements to reduce carbon dioxide emissions. But we want to do more, therefore, we calculated that in order for us to reduce our total carbon dioxide emissions by 50%, we will need to ramp up the volume of alternative material and fuel usage by a significant number. Our target is to use around 41 million tons of alternative material and around 13 million tons of alternative fuel per year by 2050. For equipment enhancements, our target is to continue improving our equipment to help reduce 3% of our total carbon dioxide emissions. The most recent example is our Shaoguan Plant, which is the most environmental and the first open cement plant in Mainland China. The plant has the most advanced technology and smart management systems while it can also treat 200 tons of city garbage per day.

Carbon Offset

To achieve carbon dioxide offset, we will need carbon capture, utilization and storage (CCUS) to help reduce 10% of our total carbon dioxide emissions. TCC has large scale calcium-looping and microalgae sequestration technologies and we are still investing more funds into pushing it to the scale of commercialization. Based on our calculation, our target is to capture 4.97 million tons of carbon dioxide or equivalent per year by 2050, which also means we need to increase our scale by 355 times.

On our roadmap to carbon neutrality by 2050 including afforestation for carbon sink. One tree can absorb around 15kg of carbon dioxide emissions per year. To help TCC reduce 5% of our total carbon dioxide emissions, we will need to plant more than 165 million trees which will take up a surface area about the size of 4.07 Taipei cities. We have contacted the international carbon sink verification agency, Verra, to know more about afforestation and whether planting in one region can offset our emissions in other regions.

Energy

The rest 32% of our carbon dioxide emissions will require us to increase the use of biomass in our power plant by 50%, build 5GW of renewables, 2.2GWh of energy storage and EV chargers, and have a battery production capacity of 3.3GWh. Our roadmap is very clear.

For renewables, in 2021, our current completed and scheduled projects are about 281MW and to achieve our 2025 target of having 500MW under management, we still need around 219MW of installations. Our recent acquisition of stakes in NHQA, the Italy-based energy storage company, whom has many energy storage projects around the world and will require solar installations. Therefore, we might raise our target.

NHQA

After the acquisition of NHQA's stakes was completed in July 2021, NHQA announced its 10x plan which includes having 1.7GWh of accumulated energy storage system (ESS) installations by 2025. Recently, NHQA announced an ESS project of 200MWh with Western Australia's state-owned company, Synergy, and this project is expected to be operational by October 18, 2022. NHQA also set up a new business line called Atlante, which is another cooperation between NHQA and Stellantis, the world's fourth largest auto maker. Atlante is aiming to build power-related infrastructures such as EV charging and energy storage for airports, seaports, and highways. The 10x plan also has a revenue target of 2030 to be 15 times of the revenue in 2022.

We are growing our ESS business and in 2021, the total capacity of completed and scheduled is around 1.113GWh. This includes on-going projects such as 350MWh in the US, 200MWh in Western Australia, 367.5MWh in Taiwan and 195.2MWh in Mainland China. ESS installations in Mainland China are expected to grow further.

UHPC Fire-Resistant Energy Storage Container

We are a cement company and we are also an ESS provider, so we combined our two technologies together to showcase the safest energy storage container using ultra-high performance concrete (UHPC) instead of the traditional metal shell. The compressive strength of UHPC is three times stronger than the average building and can withstand more than 1,000 degrees Celsius of extreme weather. Inside the container, we use our own refractory bricks. If the batteries inside the container become overheated, the heat-resistant feature of our UHPC container is far safer than the traditional metal container. We can also customize the size and look of this ESS container. UHPC is also an environmental building material as it can store more carbon dioxide than the conventional concrete and reduce waste materials. We are currently applying for the patent of this technology.

Internationalization, Diversification, and the Macroeconomy

Since 2018, TCC began conducting internationalization by investing into Turkey, Portugal and later, into Africa. We also started building renewables in Taiwan in 2018. In 2021, we launched our first AFC system in Changbin Industrial Park, which showed our determination in diversification and expansion of the energy business. Our acquisition of NHQA's stakes helped us move closer to our goal. From Bloomberg's P/E ratio comparison with peers, it shows that investors have welcomed our

decision of internationalization and diversification of the energy business.

However, there are some macroeconomic factors that might affect our operations. The first is the rising US inflation. The most recent October 2021 CPI showed 6.2% with core CPI growing to 4.6%. This growth is the fastest since the 1990s. In the past, whenever CPI reaches above 2-2.5%, the Federal Reserves will increase its Federal Funds Target Rate. This happened in the 1994, 2004, and 2015. However, the Federal Reserves has yet to hike rates even when CPI has reached above 6%. The high inflation may signal the Federal Reserves to start tapering and rate hikes sooner. This may mean future funding costs might be more expensive and mortgages might have a higher rate. This will affect property demand.

Another macroeconomic topic is Mainland China's double energy control. The double energy control has resulted in higher electricity price. This will likely push manufacturing sectors with high power consumption to find energy-saving technologies in order to survive. For the companies that cannot afford higher electricity price will have no choice but to cut down or shut down productions altogether, resulting in reduction of overall supply. The double energy control is a signal for a new energy era and TCC is prepared as we are already using alternative material and fuel and expanding our renewable developments.

Financials

TCC's 3Q21 Mainland China cement performance was affected by the double energy control and gross margin temporarily dropped to 19.7%. However, in October, cement price showed on-year growth. Nevertheless, we do not dare to be optimistic as uncertainties in the macroeconomy remain.

Taiwan's cement market performance remained strong for the first three quarters of 2021 and has been very helpful to TCC Group.

Portugal and Turkey performance in 3Q21 showed strong on-year growth with Turkey's domestic cement price showing 70% on-year growth. In Portugal, we also hold more than EUR80 million of carbon rights. This is a good example of how Europe's carbon trading system is effective in both reducing carbon dioxide emissions and maintain profitability for companies.

For Hoping Power, due to rising coal cost and also fewer operating days as we conducted equipment enhancement for safety and environmental reasons, 3Q21 net income showed a 56% decrease on year.

TCC announced third-quarter 2021 consolidated financial report:

- Revenue was NT\$26.88 billion, 2.7% YoY decrease
- Net income attributable to shareholders of the corporation was NT\$3.98 billion, 46.7% YoY decrease
- Basic EPS was NT\$0.59, 54.6% YoY decrease

For the nine months ended September 30, 2021,

- Revenue was NT\$76.9 billion, 0.6% YoY increase

- Net income attributable to shareholders of the corporation was NT\$14.84 billion, 19.5% YoY decrease
- Basic EPS was NT\$2.41, 23.5% YoY decrease

TCC maintains healthy financial ratios.

Carbon Trading Market

TCC wishes to restate that we are not against carbon tax or fee but we are against using a single rate for the carbon tax or fee. Different industries should have different rates. We wish to reiterate the four steps to building an incentivized and punitive carbon trading system that can effectively reduce the overall carbon dioxide emissions and meet the 1.5 degrees Celsius goal.

1. Each industry and company to conduct carbon footprint verification so each industry and company know where they are now and then decides how much they can reduce.
2. The government needs to set up carbon quotas or allowance that are different for different industries.
3. The government needs to set up carbon fee or tax that are comparative with the international standards so our products can remain competitive.
4. Build a carbon trading system that reward those who have done well in reducing carbon dioxide and punishes those who have not done so well through the market mechanism.

TCC believes this will effectively reduce the overall carbon dioxide emissions.

Conclusion

TCC Chairperson Chang stated “The clock is ticking. We feel the melting of ice in Mother Nature every minute and every second as the hands of the clock advance. We understand the urgency of time every minute, every second, because of the deterioration of the environment right before our eyes. I believe, I hope, not everything will vanish into thin air, so we must do our best to fight against the emissions of carbon dioxide and the passage of time. I have never worried about action but rather about inaction.”

TCC has shown a clear roadmap to 2050 carbon neutrality and they are not just a slogan, they are actionable plans. We are no longer in the Age of Navigation, in fact, we don't have a compass or GPS this time. TCC has to go through numerous researches and developments and trials and errors to sail to the new horizon ahead.

For 3Q21 Investors' Conference presentation, please go to:

https://www.taiwancement.com/en/ir_investor-meetings.html

For detailed 3Q21 financial report (Chinese version), please go to:

https://www.taiwancement.com/en/ir_quarterly-results.html

For more information about NHQA, please go to: <https://NHQA.energy/>

For questions and suggestions, please contact [TCC IR Team](#).