





- MODERNIZATION FOR PRECISION ALUMINIUM COMPANY OF MALAYSIA
- 02. BUILDING A SUSTAINABLE TOMORROW YOUR CONTRIBUTIONS TO PLANETARY HEALTH
- OVERVIEW OF REGULATIONS & LEGAL: THE CBAM LEAD
- 04. ALUMINIUM CIRCULAR ECONOMY | ALCOM INITIATIVES | CARBON SCOPES
- O5. ALUMINIUM THE SOLUTIONS







# ALUMINIUM COMPANY OF MALAYSIA BERHAD

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\*Capacity in mt per year







# HOW WE OPERATE



471

Manpower



9,137

ANSC build-up area in m2

122,555

Land area in m2

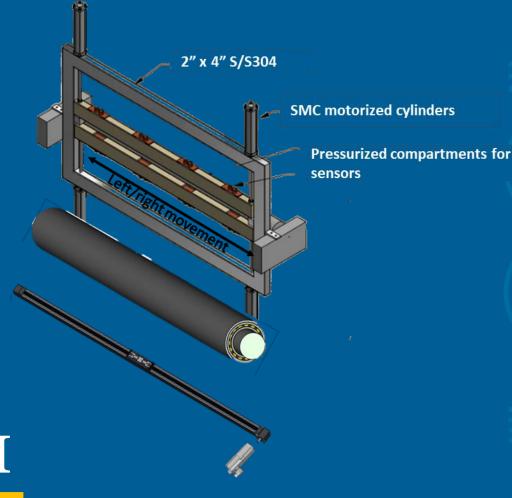


38,641

ALCOM build-up area in m2



# MODERNIZATION FOR PRECISION



# Machine Learning & AI

Algorithm | Close Loop System | Data Collection |
Sensors Thermometer Camera

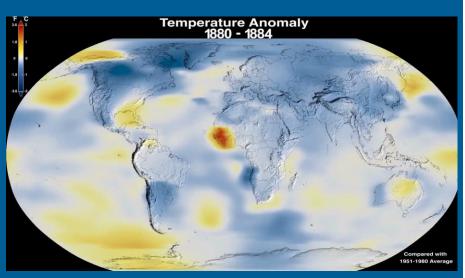
RM 1.3mil Investment

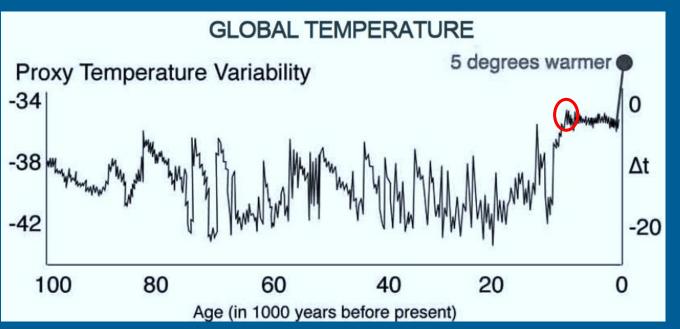


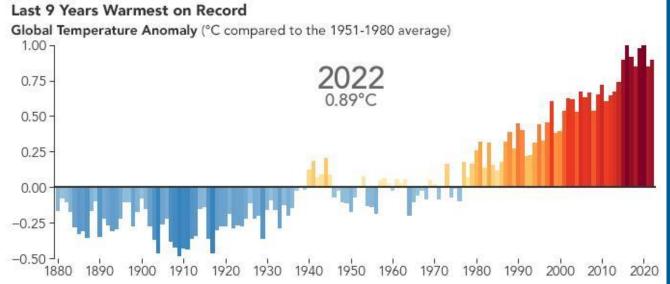


# GLOBAL LAND-OCEAN TEMPERATURE INDEX

Data source: NASA/GISS; Credit: NASA's Scientific Visualization Studio and W









# WHAT IS THE PLANETARY BOUNDARY CONCEPT?

A framework developed by scientists to define and quantify the safe operating limits for key Earth system processes and environmental parameters



#### 2023 Status of Planetary Boundaries by Johan Rockström

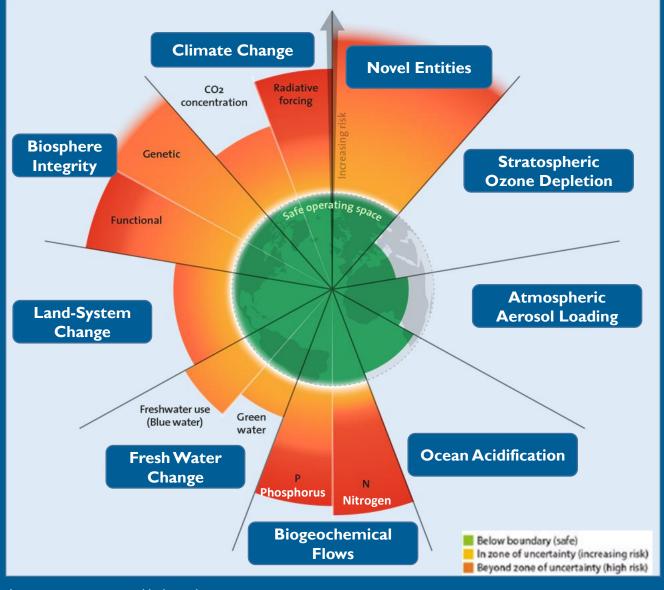


Image source: www.stockholmresilience.org

Boundaries that must not be surpassed for humans to survive sustainability on Earth.

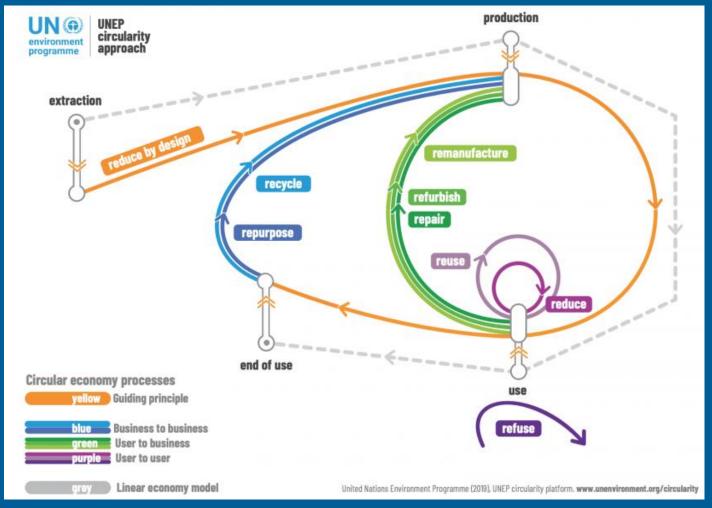


# PROMOTE CIRCULAR ECONOMY

#### Reduce by Design

Design products with a focus on durability, reparability and recyclability.



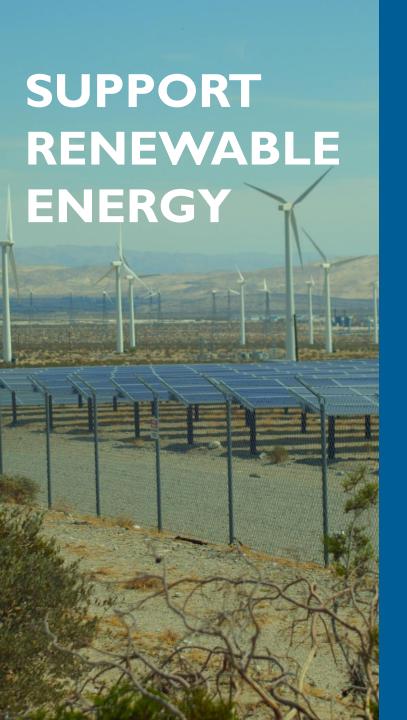


#### **United Nation Environment Programme Circularity Approach**

Image source: https://www.unep.org/circularity

Establish take-back programs to ensure responsible disposal and recycling products at the end of their life cycle.





Transition to renewable energy sources such as solar, wind and hydroelectric power for operations.

Invest in on-site renewable energy generation to reduce carbon emissions.



# ETHICAL SOURCING & SUPPLY CHAIN RESPONSIBILITY



Design, Source & Procure materials and products from suppliers who adhere to robust sustainability practices and ethical standards.

Perform supply chain assessment to proactively manage environmental and social risks, demonstrating our commitment to responsible sourcing and operations.





Incorporate eco-friendly landscaping and building designs that actively support biodiversity while minimizing habitat disruption.

Embrace and amplify unwavering initiatives dedicated to preserving and rejuvenating ecosystems and wildlife habitats for sustainability.



# REDUCE EMISSIONS & CARBON FOOTPRINT



Define sustainability-driven targets to reduce greenhouse gas emissions and craft strategies aimed at achieving carbon neutrality.

Investing carbon offset initiatives or procuring renewable energy certificates to mitigate emissions.





Embrace sustainable water-efficient technologies and practices to reduce or promote responsible water consumption.

Advocate for sustainable water conservation initiatives and the safeguarding of watersheds.





Commit to sustainable research and development efforts aimed at pioneering innovative solutions for addressing challenges on sustainability.

Forge strategic collaborations with academic institutions and research centers to propel the development of cutting-edge sustainable technologies.



# COMMUNITY ENGAGEMENT & SOCIAL IMPACT



Encourage and support programs dedicated to educate and improve healthcare for the betterment of local communities.





Give precedence to the welfare of employees through wellness programs, flexible work arrangements, and the creation of a positive work atmosphere.

Empower employees to contribute to sustainability endeavors by providing training, educational opportunities and platforms for sharing innovative ideas.





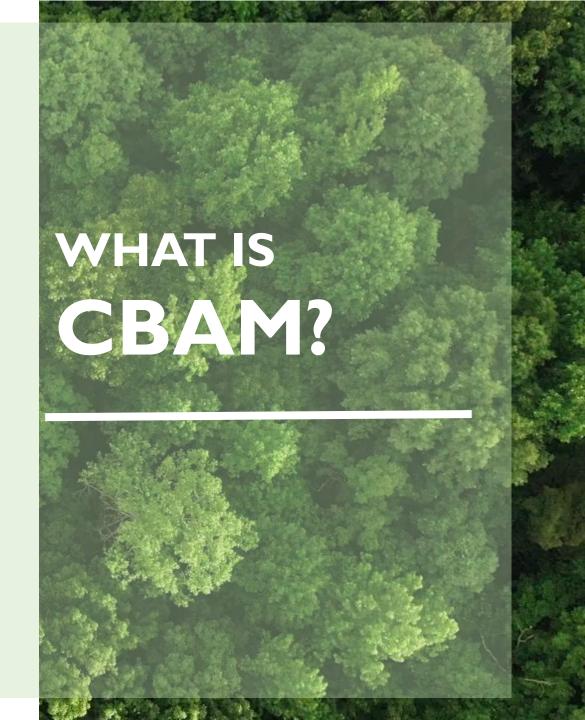




CBAM INTRO

# WHAT IS CBAM?

- EU Carbon Border Adjustment Mechanism (CBAM)
- · Aims to prevent 'carbon leakage'
- Carbon price payable under the EU Emissions Trading System (ETS)
- Applicable when the same goods are produced within the EU
- CBAM Scope: iron and steel, cement, fertilisers, <u>aluminium</u>, electricity, and hydrogen
- · Scope can increase in the future







**CBAM INTRO** 

# IMPLEMENTATION TIMELINE

Dec 2019

European Commission adopted Communication on the European Green Deal envisaging a carbon border adjustment mechanism (CBAM) for selected sectors.

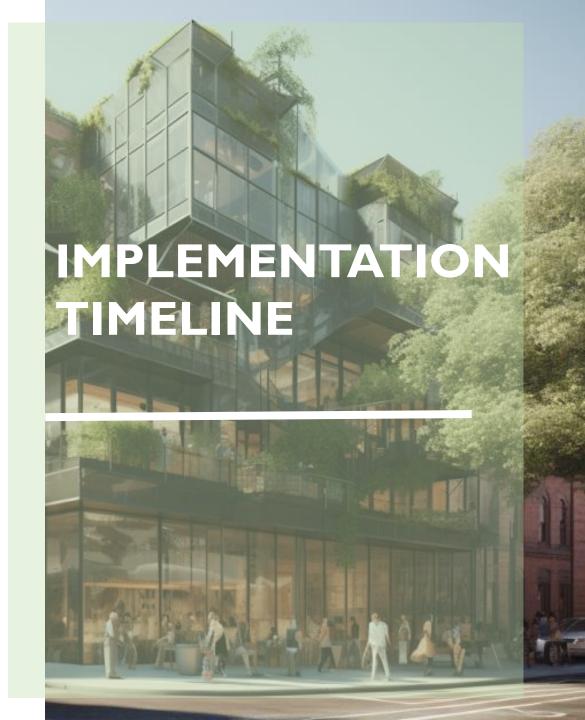
#### October 2023

The transitional period for the CBAM is expected to start where EU importers must submit quarterly CBAM reports. Such emissions are proposed to include direct and indirect ones occurring during production.

#### 2026 - 2027

The transitional period for the CBAM ends and the carbon levy under the CBAM must be paid through the purchase of CBAM certificates. The EU ETS's free emission allowances are to be replaced by the CBAM, this is to occur from 2026 and 2034.







**CBAM INTRO** 

# IMPLICATIONS TO OUR BUSINESS - COST

0%

CBAM cert

penalty

~EUR90

**EUR100** 

Until end 2026

per ton CO2e

per ton CO2e

- January 1, 2026, the CBAM will require importers of the covered goods and products to purchase and surrender "CBAM certificates"
- Compliance cost: quantification, verification (local & EU authorised), cost-sharing with client
- Cost for mitigation: e.g. switching to hydro, increasing recycling scrap, decarbonisation, etc.









### **MYHIJAU**

- MyHIJAU Mark is a Malaysian government initiative to promote the sourcing and purchasing of green products and services in Malaysia
- · Routes for registration



### ISO 14000

#### ECO LABELS & CERTIFICATIONS

- · Type I environmental labelling, which is commonly referred to as "eco-labelling"
- · Type I labels are voluntary and third-party certified
- Type III labels provide detailed information about the environmental performance of a product based on life cycle assessments.
- · They use Environmental Product Declarations (EPDs)

### STANDARDS FOR GHG MANAGEMEMENT (QUANTIFICATION)

- Guidelines for quantifying, monitoring, reporting, and verifying GHG emissions and the removals of GHGs
- · Guide for quantification and communication of the carbon footprint of products



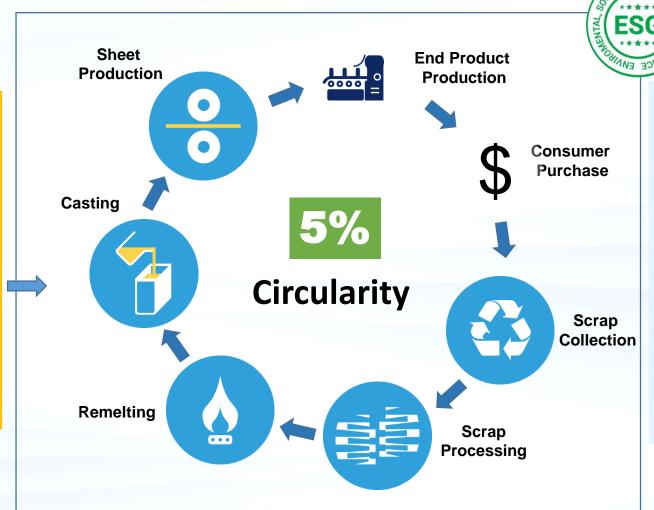


# ALCOM'S ALUMINIUM IN THE CIRCULAR ECONOMY

95%
Target Scrap
Or Hydro
Powered Ingot

Bauxite Alumina Primary
Mining Refining Smelting

95%



## Fun Facts About Aluminium

- Recycled Infinitely
- 75% of all aluminium ever made is still in use today
- Truly a GREEN METAL with low carbon footprint
- Recycled content ~ 70% to 100%.
- The recycling process requires 95% less electrical energy and produces 95% fewer greenhouse gas (GHG) emissions than manufacturing Al ingot from bauxite



## **CURRENT STATE VS FUTURE STATE**

04

To continuously enhance environmental protection system and use of renewable solar powered electrical system in our manufacturing system so as to pursuit local and global environmental sustainability

To ensure sustainability growth of ALCOM through improvement of quality, productivity and efficiency

Current State Increase flexibility in reducing dependency to coaled powered ingots and sole dependence on LME 02







To equip ALCOM with state-of-the-art and latest modern technology and automation



To improve safe working environment by installation of world-class safety quality standard of our equipment













O1 To promote shipment from present 50 kt to 80 kt per annum



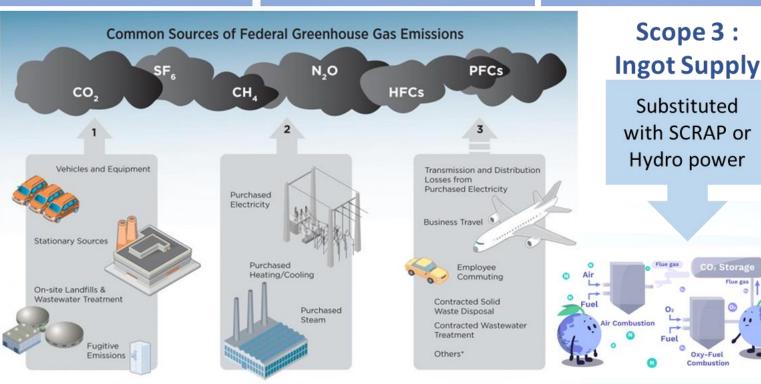
### **ALCOM'S ESG**

### POSITIVE IMPACT VALUE CREATION

Scope 1 : Direct emissions - ALCOM

Scope 2 : Indirect emissions - ALCOM

Scope 3 : Indirect emissions – Suppliers



# This is to certify that the metal as per the table below is produced wi tons of CO2e per metric ton of metal, for both Scope 1 and Sco emissions from aluminium electrolysis, aluminium casting,

#### SCOPE 1:

Greenhouse gas emissions from sources that are owned or controlled by a Federal agency.

#### SCOPE 2:

Greenhouse gas emissions resulting from the generation of electricity, heat, or steam purchased by a Federal agency.

#### SCOPE 3:

Greenhouse gas emissions from sources not owned or directly controlled by a Federal agency but related to agency activities.

ALCOM has Highest Aluminium Scrap & Hydro Powered Ingot Process Capability







### **Corrosion Based Material**

**Coating Dependent** 

# CONVENTIONAL ROOFING MATERIAL

**High Depreciation Value** 

**High Heat Absorption Material** 









Guarantee









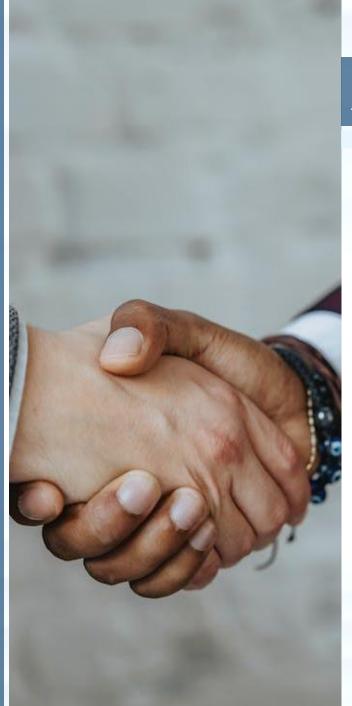
Resistance





# ALUMINIUM THE SUSTAINABLE METAL FOR FUTURE





#### **ONE & ONLY**

## ALCOM BUY-BACK GUARANTEE

The Buy Back price would be calculated as follow:
Buy Back Value (BBV) = Current LME x 60% x MYR Ex Rate

LME = USD 3542.93 (Mar'22) x RM Ex Rate = 4.2602 (Mar'22) RMI5,093.60 per Mt ≈ RM I5.09 per kg (Steel approximately RMII.00 per kg)

BBV = USD  $3542.93 \times 60\% \times RM 4.2602$ 

BBV = USD  $2,125.76 \times RM 4.2602$ 

BBV = RM 9,056.16 per Mt ≈ **RM 9.06 per kg** 

(Steel approximately RMI.00 per kg)





## **ALCOM EXTENDED WARRANTY**

|  | Warranty<br>Against      | NATURE<br>(Stucco Embossed)      | ELEGANT<br>(PE Coated) | SUPREME<br>(SPE Coated) | INFINITE<br>(PVDF Coated) | Brand B<br>Generic | Brand B<br>Premium | Brand B<br>Enhance |
|--|--------------------------|----------------------------------|------------------------|-------------------------|---------------------------|--------------------|--------------------|--------------------|
| General Area, General Building > 3km from coastal area | Perforation by Corrosion | 25 (0.50-0.70)<br>30 (0.80-0.90) | 30                     | 30                      | 35                        | 15                 | 25                 | 30                 |
|  | Peel or Flake            | -                                | 15                     | 15                      | 15                        | 10                 | 15                 | 15                 |
|  | Excessive<br>Fading      | -                                | 10                     | 15                      | 15                        | 5                  | 10                 | 10                 |
|  | Discolouration           | -                                | 5                      | 5                       | -                         | -                  | 5                  | 5                  |

#### **Factories / Industries**

Case by case (depends on industry, process, chemical used, building structure, location and etc)



## **ALCOM EXTENDED WARRANTY**

|  | Warranty<br>Against      | NATURE<br>(Stucco<br>Embossed) | ELEGANT<br>(PE Coated) | SUPREME<br>(SPE Coated) | INFINITE<br>(PVDF Coated) | Brand B<br>Generic | Brand B<br>Premium | Brand B<br>Enhance |
|--|--------------------------|--------------------------------|------------------------|-------------------------|---------------------------|--------------------|--------------------|--------------------|
| Coastal Area,<br>General Building<br>< 200m<br>201 – 1000m<br>1001 – 3000m | Perforation by Corrosion | 10<br>15<br>20                 | 15<br>20<br>30         | 15<br>20<br>30          | 15<br>20<br>30            |                    |                    |                    |
| < 200m<br>201 – 1000m<br>1001 – 3000m                                      | Peel or Flake            | -<br>-<br>-                    | No<br>No<br>6 - 8      | No<br>No<br>10 – 12     | 10<br>10<br>15            | N/A                |                    |                    |
| < 200m<br>201 – 1000m<br>1001 – 3000m                                      | Excessive<br>Fading      | -<br>-<br>-                    | No<br>No<br>4 - 6      | No<br>No<br>8 - 10      | 8<br>8<br>12              |                    |                    |                    |
| < 200m<br>201 – 1000m<br>1001 – 3000m                                      | Discolouration           | -<br>-<br>-                    | -                      | -                       | -                         |                    |                    |                    |

#### **Factories / Industries**

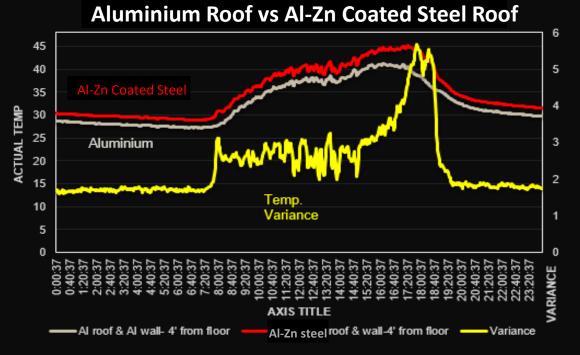
Case by case (depends on industry, process, chemical used, building structure, location and etc)





# COOLNESS OR THERMAL EFFICIENCY







**Sustainability: Our Future** 

**Environment : Circularity and Recyclability** 

**Business: Customer, Banking & Financing** 

#### **Solar Panel: 48% Savings on Roofing**

- A. ONE & ONLY PROGRAM: Achieve 48% roofing cost savings through tax incentives by including ALCOM Aluminium roofs in the Solar Investment Package.
- B. One-stop Integrated & Converged Solution Provider; A single provider handles everything from government approvals, incentive claims, financial support, engineering design, procurement, construction, commissioning, project management, operation, maintenance, and warranties for roofing and solar panels.
- C. One-stop Integrated & Converged After Sales Service – Warranty and After Sales Service/Support under One Liability Window

# ONE STOP SOLUTION: ALCOM PREMIUM ALZIP & SOLAR SOLUTION

| Items                              | ALCOM Aluminium 0.6 mm NATURE SE | ALCOM Aluminium  0.6 mm ELEGANT PE (Colour) | Steel Investment<br>Value |  |
|------------------------------------|----------------------------------|---|---------------------------|--|
| Total Roofing                      | RM1,559,479                      | RM1,865,299                                 | RM1,766,181               |  |
| 48% Potential Savings Roofing      | RM726,748                        | RM869,265                                   | RM -                      |  |
| Net Investment                     | RM832,732                        | RM996,033                                   | RM1,766,181               |  |
| Net Savings<br>(Compared to Steel) | RM933,450                        | RM770,148                                   |                           |  |

<sup>\*</sup>Simulation above is base on RM3.5 million investment on solar. Typical cap of 48% roof savings is at 50% of the investment value of solar panel.

- 1. Operational costs excellence as well as Sustainability.
- 2. Sustainable life span for Solar + Re-Roofing project.
- 3. New Business Route (if New Project): Roofing directly under Owner. Main Con can be project management partner for costs savings.



