



Green Auto Revolution

EMISSION REDUCTION

A “BENEFIT TO MANKIND” INVENTION
To Fight Climate Change
For Sustainable Development

InnoTAD Auto Pte Ltd Company Profile

InnoTAD Emission Reducer, iER

InnoTAD worries about the seriousness of the automotive industries inherently destroying our environment. This pushes us to create greener and safer environment for mankind by making more EFFICIENT automobiles through compelling technologies. InnoTAD involves in intensive research and development for series of innovative solutions to improve the efficiency of automotive.

A “Benefit to mankind” invention:

InnoTAD Emission Reducer, iER, is a patented device. It strives to reduce transportation emission, and reduce global greenhouse gases emission to fight climate change.

In Search of Sustainable Well-being:

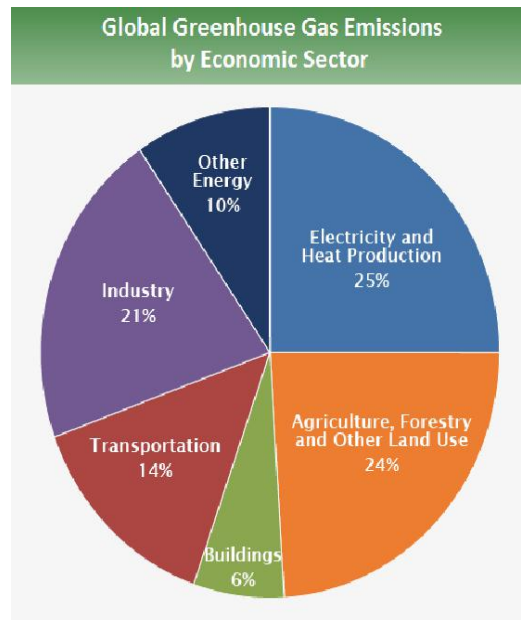
Emission Reduction technology is applicable in various sectors, in modern automotive, generator, marine, aircraft, and engine related industrial applications.

Principle 1 of the RIO Declaration states:

“Human beings are the centre of concerns for sustainable development. They are entitled to healthy and productive life in harmony with nature”

iER for Sustainable Development

- Meeting the needs of present transportation without compromising the ability of future generations to meet their own need.
- We cannot compromise emission related issues that are impacting the climate change and global warming.
- 14% global greenhouse gases are related to transportation sector and the rest are applicable to other Industrial, electricity & energy related emission



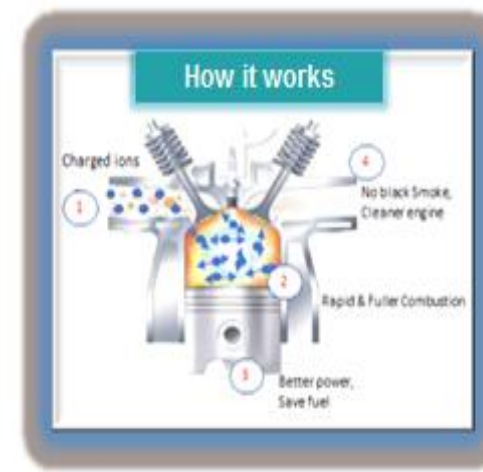
Current vehicles Situation:

- **Car makers' challenges** to meet stringent diesel NOx emission standard.
- **Governments challenges** in meeting effective emission control.
- **High Transportation fuel cost** for corporations and drivers.

Our Solution:

- We create greener and more efficient fuel vehicles to contribute the least overall greenhouse to fight climate change and health hazard.
- With > 5 years of R&D, the innoTAD® Emission Reducer is a Patented product.
- It is **1st in the world of its kind** that can address fuel-saving, emission pollutants, noise, power and engine cleaning issues all at same time!
 - Improving fuel consumption up to 40%
 - Drastically reduce harmful exhaust emissions up to 99%.

HOW iER WORKS?



1)The **iER** will produce **charged ions/air** and flow into combustion chamber.

2)**Charged ions/air** enables more **RAPID & FULLER engine combustion**.

3)**RAPID Combustion** will increase **Power** and hence better **fuel saving**.

4)**FULLER Combustion** will enable complete fuel burning. Hence, drastically reduce **Emission Pollutants (e.g. CO, NOx)** and contribute to a greener environment.

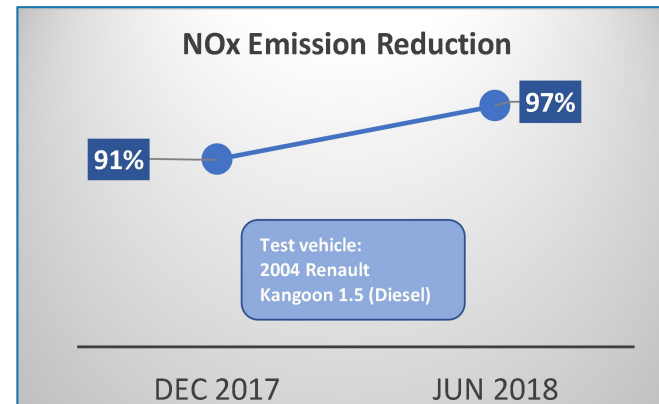
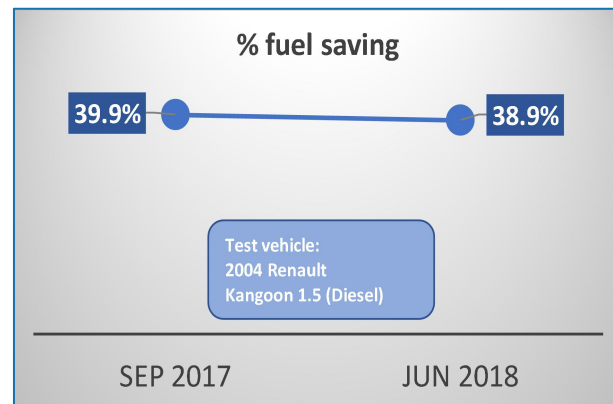
InnoTAD Emission Reducer, iER

Certification

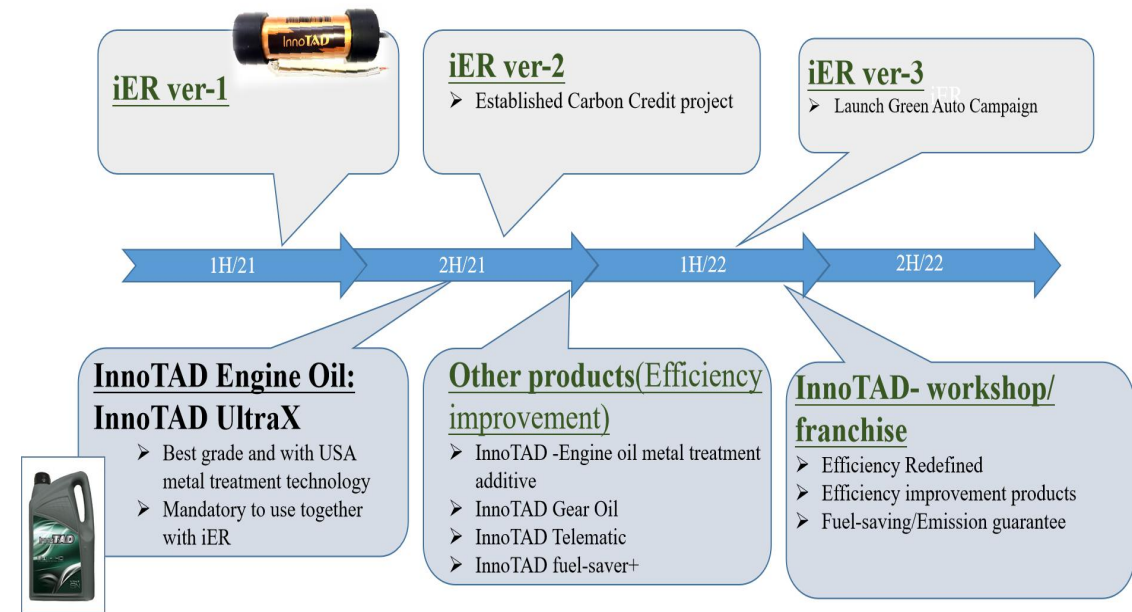
Items	Organization	Parameters	Remark	Date
Installation	Land Transport Authority (LTA)	Car installation	Clearance as non-engine modification installation	Jul 2016
Environment	National Environment Agency (NEA)	Environment impact	Clearance for installation for no environmental impact	Feb 2016
Emission	VICOM Emission Test Laboratory	Emission Reduction	Certified under EURO 5 standard	Dec 2015 Dec 2017 Jun 2018
Performance	TUV-SUD-PSB	Fuel Saving, power & Torque, Noise Reduction	Certified by TUV-SUD-PSB Pte Ltd - Singapore (www.tuv-sud-psb.sg)	Dec 2015 Sep 2017 Jun 2018
Safety	TUV-SUD-PSB	Fire, explosive, Charged air safety	TEST REPORT: 7191171095-CHM18-YL: 1) No fire hazard 2) Non-explosive 3) Charged air safe to engine	Dec 2018

Fuel Saving – TUV TEST REPORT No:
7191170899-CHM17-YL (Sep 2017)
7191188475-CHM18-YL-1 (Jun 2018)

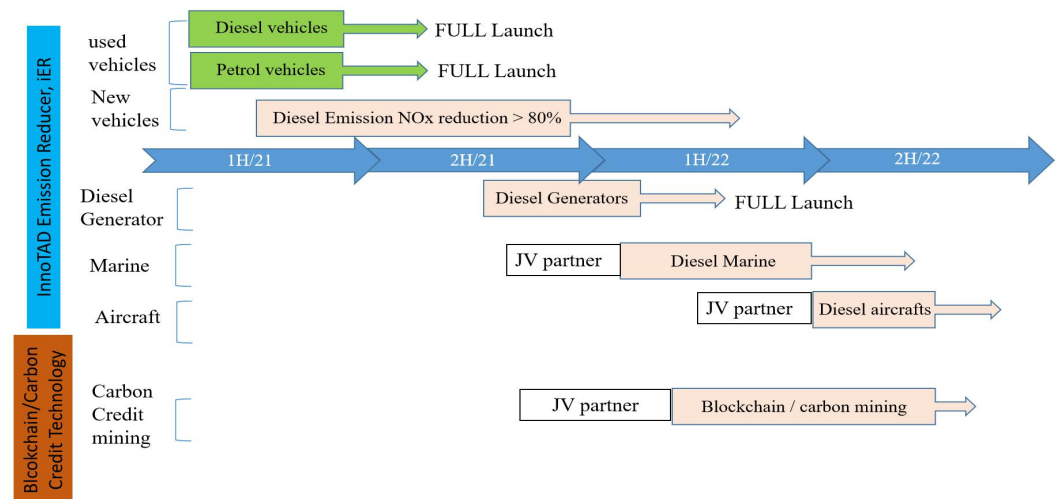
NOx Emission Reduction – TUV TEST REPORT No:
7191177225-CHM17-YL (Dec 2017)
791188475-CHM-YL-2 (Jun 2018)



Product Mix Roadmap



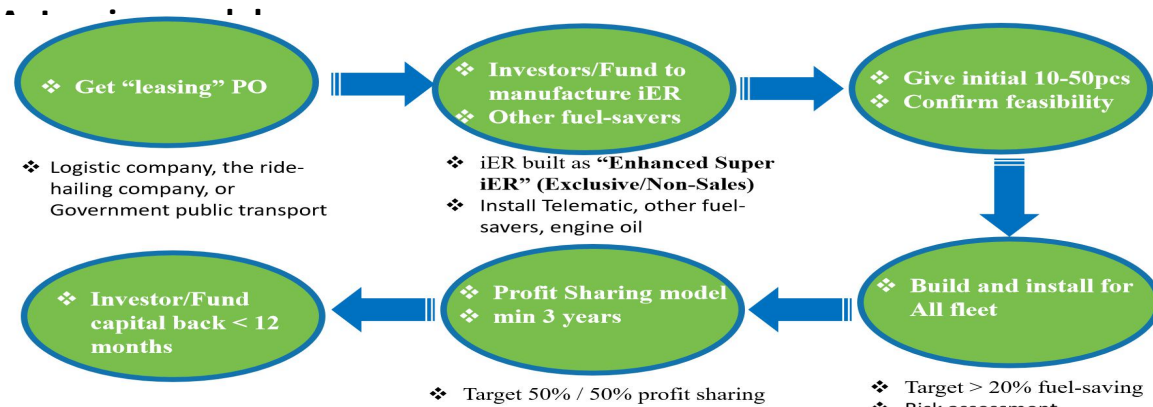
Product Segments Timeline



Business Models Vs Electric Solution

Business models

In addition to normal selling of iER, two main business models are identified as Leasing and Platform models that can bring the company to a much higher level in the global stage.



B: Carbon Credit & Big Data Transportation Platform



Leasing and Platform models advantages

- Provide faster market penetration:
 - Ride-hailing app operator that has international reachout.
 - Big logistic company that has international reachout.
 - Lower their barrier of entry to work with us
- Greater international scalability and focus on key global partners.
- Create a platform for other "fuel efficiency products"
- Collaborations as a system solution for best overall result.

Electric Solution?

- A report by the Ricardo consultancy estimated that production of an average petrol car will involve emissions amounting to the equivalent of 5.6 tonnes of CO₂, while for an average electric car, the figure is 8.8 tonnes. Despite this, the same report estimated that over its whole life-cycle, the electric car would still be responsible for 80% of the emissions of the petrol car.
- It takes time to charge an electric car and the overall efficiency of an electric car can be affected by longer routes, in the industry we have been informed this was a huge negative impact for fleet operators.
- Implementation of charging station around the cities causes a great problem for road users and residents in communities.
- The [climate impact](#) and [negative environmental footprint](#) of electric cars is often underestimated. First, many electric car components have little or no end-of-life recycling value. This is especially true for the [lithium-ion batteries](#). Second, only a small percentage of power grids providing electricity to charge one's car are "green" in terms of incorporating mostly a mix of renewable energies. Third, natural resources such as nickel and cobalt generate high levels of [air, soil and water pollution](#) when being mined and smelted.
- This means that alternative fuel cars create pollution and carbon emissions in other ways by shifting them to those countries where the production relevant minerals, metals and rare earths are extracted. This local mineral extraction is mostly only made possible through high levels of traditional energy consumption (e.g. coal, etc.) and the use of toxic chemicals.
- Much needs to be done to kick off the electro-mobility revolution. In terms of infrastructure, governments run the risk of falling behind market production leaving automotive manufacturers in the cold. According to Morgan Stanley, an overall global [\\$2.7 trillion infrastructure investment](#) is needed in the near future to make electric cars a lasting success over the next two decades.
- The areas of required investment are not only down to local (speed loader) car-charging points, but also include [power grid expansion](#) and subsidies to guarantee nationwide green energy, grid stability and lower market prices for new car purchases.
- Manufacturers also have to significantly improve battery performances and chemistry to increase [electric car ranges](#), massively enhance the batteries' [reuse and recycling](#) as well as make new technologies more attractive for end users.

Climate Change Impact

"Environment ministers from the 28 member states agreed that the total number of cars sold by each manufacturer in Europe must emit 35 per cent less CO₂ than 2020 levels. They also included a target of a 15 per cent CO₂ cut by 2025 and an opt-out for smaller manufacturers."



The EU is spending about 20% (over EUR 206 billion) of its overall budget in 2014-2020 to climate change-related action. The Commission proposed to raise this share to 25% for the period 2021-2027.

The European Union's total carbon emissions from fossil fuels rose last year by 1.8 percent, highlighting the challenge the bloc faces in meeting its climate targets.

The official EU statistics agency, Eurostat, released the early figures this week, which estimated the level of carbon emissions from energy usage across all 28 member states.

The Telegraph

The UK will spend trillions to reduce CO₂ emissions while the real offenders do little

Climate Action 

EU targets for reducing greenhouse gas emissions

- By 2020¹³:
 - 20 % reduction in greenhouse gases emissions (from 1990 levels);
 - 20 % share of renewable energy in energy consumption;
 - 20 % gains in energy efficiency.
- By 2030¹⁴:
 - at least 40 % reduction in greenhouse gases emissions (from 1990 levels);
 - at least 27 % share of renewable energy in energy consumption;
 - indicative target to improve energy efficiency by at least 27 % compared to projections of future energy consumption¹⁵.
- By 2050¹⁶, the EU intends to reduce its greenhouse gas emissions by between 80 % and 95 % compared to 1990 comprising all main sectors.

13 COM(2008) 30 final of 23 January 2008, '20 20 by 2020 Europe's climate change opportunity' (2020 Climate and Energy Package).

14 COM(2014) 15 final of 22 January 2014, 'A policy framework for climate and energy in the period from 2020 to 2030' (2030 Climate and Energy Framework).

15 The 2030 energy efficiency target will be reviewed in 2020 having in mind a 30 % target.

16 COM(2011) 112 final of 8 March 2011, 'A roadmap for moving to a competitive low-carbon economy in 2050'. The European Council and the European Parliament endorsed this approach proposed by the Commission in February 2013 and March 2013 respectively.

Source: Court of Auditors' special report 31/2016 "Spending at least one euro in every five from the EU budget on climate action: ambitious work underway, but serious risk of falling short"

FT

Impact of climate change in Europe

Arctic region

Temperature rise much larger than global average
Decrease in Arctic sea ice coverage
Decrease in Greenland ice sheet
Decrease in permafrost areas
Increasing risk of biodiversity loss
Some new opportunities for the exploitation of natural resources and for sea transportation
Risks to the livelihoods of indigenous peoples

Atlantic region

Increase in heavy precipitation events
Increase in river flow
Increasing risk of river and coastal flooding
Increasing damage risk from winter storms
Decrease in energy demand for heating
Increase in multiple climatic hazards

Mountain regions

Temperature rise larger than European average
Decrease in glacier extent and volume
Upward shift of plant and animal species
High risk of species extinctions
Increasing risk of forest pests
Increasing risk from rock falls and landslides
Changes in hydropower potential
Decrease in ski tourism

Coastal zones and regional seas

Sea level rise
Increase in sea surface temperatures
Increase in ocean acidity
Northward migration of marine species
Risks and some opportunities for fisheries
Changes in phytoplankton communities
Increasing number of marine dead zones
Increasing risk of water-borne diseases

Boreal region

Increase in heavy precipitation events
Decrease in snow, lake and river ice cover
Increase in precipitation and river flows
Increasing potential for forest growth and increasing risk of forest pests
Increasing damage risk from winter storms
Increase in crop yields
Decrease in energy demand for heating
Increase in hydropower potential
Increase in summer tourism

Continental region

Increase in heat extremes
Decrease in summer precipitation
Increasing risk of river floods
Increasing risk of forest fires
Decrease in economic value of forests
Increase in energy demand for cooling

Mediterranean region

Large increase in heat extremes
Decrease in precipitation and river flow
Increasing risk of droughts
Increasing risk of biodiversity loss
Increasing risk of forest fires
Increased competition between different water users
Increasing water demand for agriculture
Decrease in crop yields
Increasing risks for livestock production
Increase in mortality from heat waves
Expansion of habitats for southern disease vectors
Decreasing potential for energy production
Increase in energy demand for cooling
Decrease in summer tourism and potential increase in other seasons
Increase in multiple climatic hazards
Most economic sectors negatively affected
High vulnerability to spillover effects of climate change from outside Europe



Source: EEA <https://www.eea.europa.eu/publications/climate-change-impacts-and-vulnerability-2016/key-findings>

Carbon Credit Strategy for Sustainable Development

Evidence of changing climate

- **Atmospheric CO2 concentrations.** In recent years, atmospheric CO2 concentrations have continued to rise and now exceed 400 parts per million.
- **Global average surface temperature.** Human-induced warming, combined with a small and temporary warming contribution from a natural El Niño event, contributed to record-breaking global average surface temperatures in 2015 and 2016. Despite no substantial contributions from natural climate variability, 2017 was in the top three warmest years on record. Global average surface temperatures have consistently exceeded 1°C above pre-industrial levels over the last few years.
- **Arctic sea ice decline.** A substantial and pronounced decline in the extent of Arctic sea ice has been observed over the last decade. Since 1979, September sea-ice extent has declined by on average 13% per decade.
- **Global sea-level rise.** Recent satellite data indicate an increase in the observed rate of global sea-level rise since the 1990s.
- For example, Over the past ten years, as emissions in power and industry have reduced, transport has become the largest emitting sector of the UK economy, accounting for 28% of UK greenhouse gas (GHG) emissions in 2017. UK New Target is to Reduce transport Emissions.

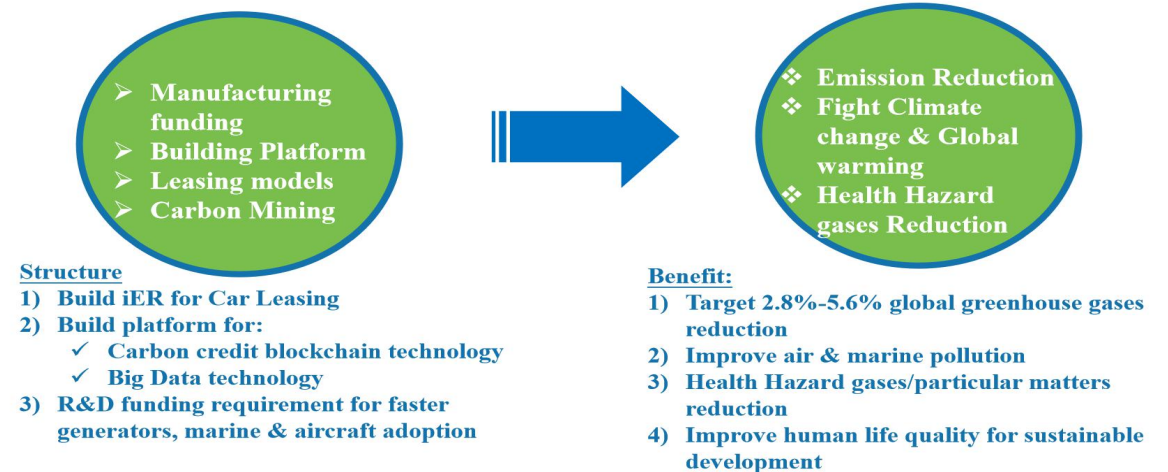
Solution

- Find an effective way to use existing technologies until further technologies are developed for cleaner and more efficient use of fossil fuels
- Ensure to align and uphold all stakeholders needs by ensuring
 - Businesses are at the forefront of the change in their vehicles as they save with nearly zero investment .
 - Earning and saving from the implementation by giving back to the community to ease the effects of emissions.
 - Helping the growth of economy as we decrease reliance on fossil fuels for transport by up to 50% fuel saving on older vehicles.
 - Burdening businesses for not having any NOx emissions initiative as they are our streets. Initiate effective policies that promote emission reduction.

iER Key Advantages for Sustainable Development

- Leasing models & platform building for faster product penetration for greater environmental benefits:
 - a. Get the most vehicles, generators, marines, aircrafts for emission reduction.
 - b. Readily available solution for all old vehicles and new car makers.
- R&D funding for further product enhancement for automotive, generators, marine, aircrafts, and other industrial and energy adoption.
- Provide scalability for all transportation sectors participation with reward system for long term sustainability.

Carbon Credit and Platform Strategy:



iER Challenges for Sustainable Development

- Many TUV certifications to confirm iER is a non-engine modification, not an explosive device, not damaging to the engine and it is safe to install in the vehicle.
- With this simple installation, it is easy to retrofit onto any vehicles.
- Leasing models require initial capital investment but the process is structured to be a very safe investment.
- Gather the government collaboration and support on carbon credits to generate further revenue for users and the company.

Board Members



Leo Chin -CEO

Leo founded InnoTAD groups of company since 2016. Leo and the in-house scientists team vows to create greener and safer environment for mankind by making more efficient automobiles through compelling technologies. Through almost 5 years of intensive R&D, the InnoTAD Emission Reducer, iER (Fuel Reducer), is the first company product that is Patented and is the first of its kind in the world with the capability to effectively improve the automobiles in multiple ways (fuel, noise, power, engine, emission and pollution). Prior to InnoTAD, Leo founded his crowdfunding portal in 2013 that involves in raising fund for various Development projects in South East Asia.



Bilal Semambo -Managing Partner -Global Investment

Bilal will be heading InnoTAD in terms of global investment and market expansion. His vision for using iER towards various government level for carbon credit market is valuable. Bilal is also the founder and Chairman of Afica Masharik Group of Companies Limited. His area of focus and professional experience International business, Corporate finance and Capital markets. His vision and leadership has resulted in establishing successful and credible business entities across several industry sectors especially in the fields, of Gas turbine generation, Solar and wind, other conventional energy generation, and InnoTAD emission technology.



Yaro Diallo - Finance Director

Mr Yoro Diallo, a veteran commercial banker from west Africa with more than 30 years of experience who has held many senior positions with reputed international banks like Vice President Citibank New York for 22 years and Eco Bank Transnational Incorporated Lome, Togo, a leading Pan-African Bank. Yoro has extensive knowledge and expertise in the areas of international trade, private banking and wealth management, financial institutions and corresponding banking. Yoro has in-depth understanding of the African markets and has excellent network across the continent covering government agencies, regulators, financial institutions, corporates and high net worth individuals.



Vincent Leong - Director

Vincent founded his own company Bauhaus Furnishing Pte Ltd since 1987 till present. His Specialization include Design and Build, Manufacturing of furnitures, Architecture & Building Construction, Marine Industry. Vincent is heading InnoTAD in company manufacturing expansion. Vincent will be helping to penetrate to many markets in US, Euro, middle East, Africa countries, and many ASEAN countries, including Malaysia, Vietnam, Philippines, Cambodia, Thailand and Indonesia. Beside marketing the product, Vincent will be helping to focus on product quality and customer after sales service.



SARATH SOBHANAN - Director

Sarath is heading InnoTAD to open various market around the world. With his vast experience and connections in Middle East and Africa countries, he is leading the team and remain focus in these two regions. There are huge numbers of industrial vehicles that are old in Africa countries. Among these older vehicles, the fuel saving can be achieved is much more significant. Hence, Africa countries remain one of the most important market for fuel cost reduction. Sarath is also the CEO of Noor Alfajr that specialise in Organic fertilizer and plant feed trading.



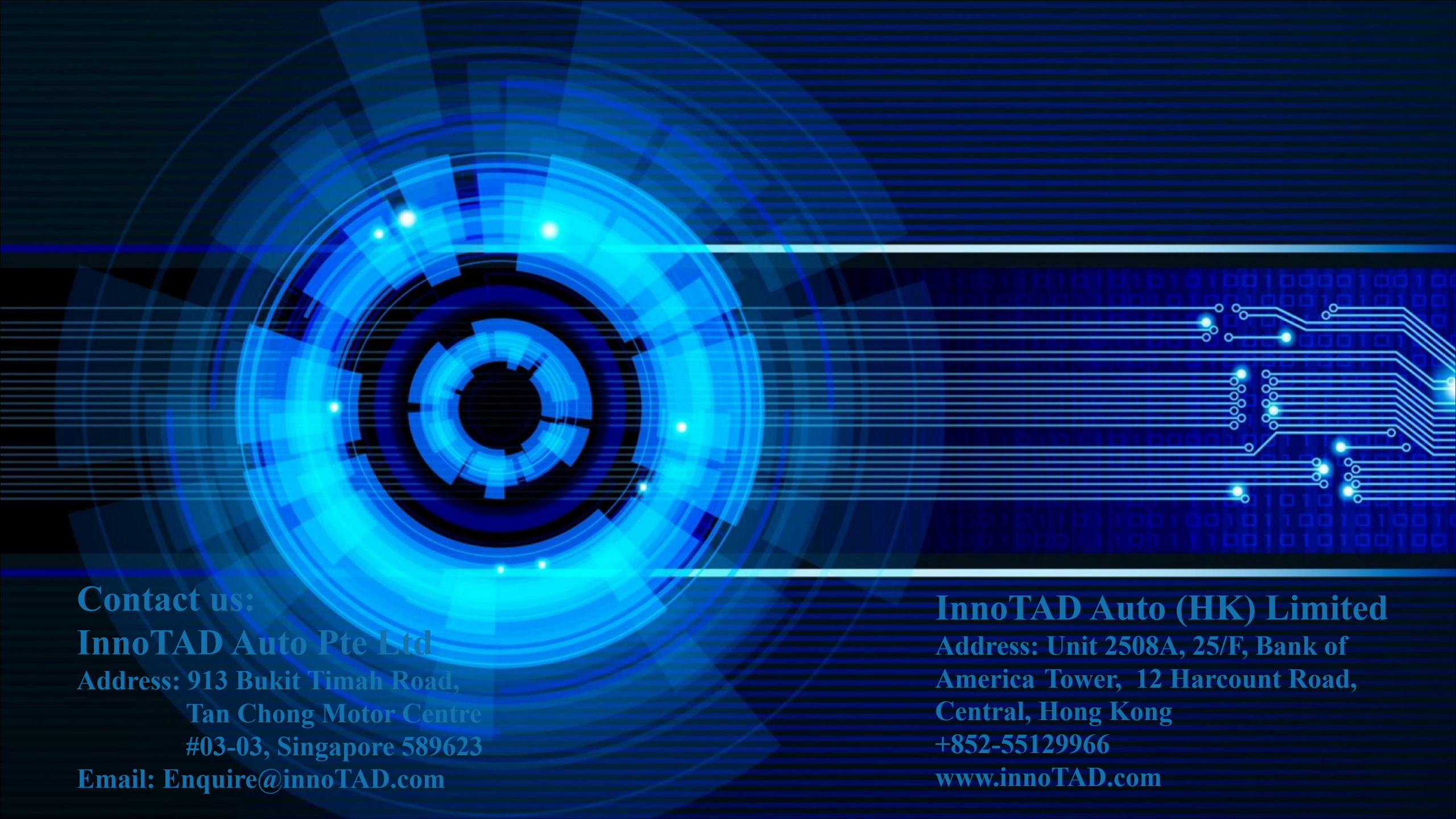
JC Quek- General Manager

JC has 20+ years in management positions in MNCs (Philips Electronics and Reeds Exhibition) and startups, by providing strategic direction, financial decision, interim GM, CFO, CEO, business growth, digitalization and improvements across the APAC. He is a management consultant specializes in management solutions (which cover growth, turnaround, and risk) that benefited about 300+ companies with diverse culture, trade, and leadership. He is a serial entrepreneur and has co-founded businesses in the IT, trading, consulting, and construction industries. JC is heading the General management of InnoTAD.



Roy Chin - Sales Director

Roy founded InnoTAD Auto HK subsidiary in 2016. Roy has various startup experience since he left teaching professional since 2015. His primary focus is to push InnoTAD product and service in Asia. He has vast network in Hong Kong and China. China is one of the most important market among the industrial vehicles. Diesel fuel usage is very huge in China, as industrial diesel vehicles are still the primary logistic and transportation tools among the provinces. With every month running into tens of thousand of fuel cost, InnoTAD penetration in this sector is one of the main strategy goal.



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