Green Freight Financing Opportunities for Asia-Pacific
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Executive Summary</td>
</tr>
<tr>
<td>5</td>
<td>Part 1 – Setting the Stage: Context for Change</td>
</tr>
<tr>
<td>8</td>
<td>Part 2 – Examining the Green Finance Opportunity in Asia-Pacific for Green Freight</td>
</tr>
<tr>
<td>20</td>
<td>Part 3 – Next steps to harnessing green financing opportunities</td>
</tr>
<tr>
<td>21</td>
<td>Glossary</td>
</tr>
<tr>
<td>22</td>
<td>References</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Asia’s economic rise and as a source of global economic growth is clear. However, there is a dark side to this exponential growth and possible risk. One of which is the poor environmental record across the region. In China and India, heavy industries and coal burning and the resulting air pollution have adversely affected the quality of living in the urban cities. In Southeast Asia, illegal forest fires in Indonesia have also caused severe transboundary haze pollution. While these issues capture the headline, the transport sector is also increasingly contributing to air pollution, congestion and decreasing quality of life.

Transitioning to a clean and low carbon transport future not only requires policy support, market participation but also financial support. In this report, we will be addressing how the growth of green finance in recent years can be harnessed to help accelerate the transition towards cleaner and greener freight in Asia.

Our research shows that while Green Finance is growing in Asia-Pacific, even the leaders have yet to look deeply at the needs and challenges of the freight transportation sector to develop commercially viable financing products to accelerate the transition. Our review included looking at financing schemes focused on SME development instead of just green funds. However, many SME financing support were focused on industrial efficiency, and had yet to consider the freight sector.

All of the 5 financing schemes that we found relied heavily on government or international organization support. This is probably due to the impression that technologies in green freight are new and untested. However, in the context of Asia, where a lot of old trucks run on the road, improvements and fuels savings can come from upgrades to technologies that have already been tried and tested before. Better data and awareness of the pollution reduction potential can be helpful here.

Lastly, we found that even where financing was available to upgrade to cleaner and greener freight, the take up rate is low. More analysis needs to be done on where the information or capacity gap is for logistic players to access such financing support.
PART 1 – SETTING THE STAGE: CONTEXT FOR CHANGE

CURRENT (AS-IS) OVERVIEW AND EMERGING TRENDS

1.1 THE GREEN FREIGHT FINANCING OPPORTUNITY FOR ASIA-PACIFIC

It is estimated that the energy efficiency opportunities for freight transport is approximately US$60 billion. In road freight transportation, which is the focus of this research report, the opportunity is two-fold. They include the investment to enable changes to the design and engines of current transport vehicles. Secondly, it is increase in the projected production of electric vehicles. Both must happen concurrently as the transition to electric vehicles is a gradual process. Investments are thus needed for research and development (R&D) into new technologies and changes to production facilities and automobile parts to produce more energy-efficient vehicles. This, coupled with an impetus for change in Asian countries shifting towards quality sustainable growth, countries are increasing aware of the need to take a stand to increase their commitment to take a responsibility to mitigate climate change.

1.2 EARLY LEADERS IN GREEN FINANCE IN ASIA-PACIFIC

The interest in going green started in the 1970s and gained momentum in the 1990s where corporations gave attention to how their business operated in relation to the environment. The financial sector quickly moved to support the needs of the private sector. By the turn of the millennium, it was shown that taking environmental considerations had a financial impact on the business performance immediately and also in the long term. Beyond financial benefits, corporations also see value in going green as investors also increasingly demand for greater corporate transparency in assessing investment opportunities. In response, stock exchanges are also mandating disclosures among their listed companies.

Governments are thus relooking their national growth strategies and setting frameworks to ensure environmental protection, as well as the need for financial policies to help drive green investments and steer the economy towards sustainability.

China. The leadership of the Chinese Communist Party has also stressed the important of the need to shift to a new development strategy. As such, it has made Green Finance a priority and emphasised the promotion of Green Finance as part of its 13th Five-Year Plan (2016-2020).

Since being the chair of the G20 Hangzhou Summit in 2016, China has been the global leader in clean energy as well as the world’s leading issuer of green bonds. It has US$436 billion of green bonds issued in 2016, which is nearly 40% of the global market. This is in part due to the China Securities Regulatory Commission publishing guidelines on the issuance of green bonds by stock exchange-listed companies. In 2017, pilot zones to promote green finance were launched for five provinces – Guangdong, Guizhou, Jiangxi, Zhejiang and Xinjiang.

Hong Kong. Given the close proximity of Hong Kong to China, Hong Kong is also pushing ahead to develop green financial products and expertise. The Budget Speech 2018-2019 laid out steps to the government’s commitment to green finance, emphasising the government’s plans to issue the first inaugural government green bond in 2018 – 2019. In addition, the Hong Kong Quality Assurance Agency will launch the Green Finance Certification scheme to provide third-party certification service for potential green bond issuers.

Japan. As one of Asia’s major economy, the country is positioning itself to become a leader in Green Finance. Japan’s Ministry of Environment released green bond guidelines in Mar 2017, and listed companies to report on their environment, social and governance practices from the financial year ending 31 Dec 2017 onwards.
the Metropolitan Government of Tokyo announced its plans in November 2016 to issue green bonds. The Japan Government Pension Fund (GPIF) announced in July 2017 that it would increase its allocation of environmentally and socially responsible investments from 3 to 10%. This means that approximately US$29 billion of ESG-related investments would be made both in the region and globally. This move would help stimulate the supply of green investment products and opportunities.

**Indonesia** The Financial Service Authority (OJK) issued a Sustainable Finance Roadmap for the period of 2015 to 2019. Longer term, there is a 2015 – 2024 roadmap to increase demand and supply for sustainable financing targeting specific priority sectors – industry, energy, agriculture, infrastructure and micro, small and medium enterprises. In 2017, OJK also launched a framework and introduced regulations for green bond issuance, the first step in the creation of a financial sector supportive of sustainable development.

**Australia** The Clean Energy Finance Corporation is a green investment bank created by the Australia Government in 2012. It is one of the very few countries with a dedicated green investment bank. Between 2012 and 2017, it has deployed A$4.3 billion of capital to support projects across various categories worth A$11 billion. In 2015, the Carbon Credits (Carbon Farming Initiative) Act 2011 also established the Emissions Reduction Fund (ERF) to help Australia achieve its 2020 emissions reduction target.

**THE ROLE OF THE VARIOUS STAKEHOLDERS IN FINANCING GREEN FREIGHT**

**1.3 INTERNATIONAL ORGANIZATIONS**

International organizations have been active within emerging markets in supporting a transition to more energy efficient economies, including a transition to cleaner vehicles. This includes organizations like GIZ, the Swiss Secretariat for Economic Affair, as well as multilateral banks like the World Bank, and existing international funding mechanisms like the Green Climate Fund. With the 2015 Paris Agreement around climate change bringing about renewed international cooperation around climate change, these international organizations continue to play and important supportive role in providing pilot funds or risk sharing facilities.

**1.4 GOVERNMENT**

In the traditional model, the government will apportion part of the national budgets towards public initiatives. However, this has an opportunity cost in terms of other societal needs. Public-Private Partnerships (PPP) could also be another form of financing solution to enable to provision of public assets or service by private organisations. While private sector involvement and partnership is vital to ensure that capital avenues from the private sector can support public initiatives, there is every reason to believe that governments can take significant steps in shift the economy towards sustainable development and driving the right behaviours.

It is with this intent to encourage transport operators to seek out green innovative transport technologies to contribute to better air quality and public health that national governments have set aside funding to support the testing of green solutions for the transport and goods vehicle sector. This also encourages the optimization of business processes for productivity efficiencies for businesses, especially small and medium size enterprises (SMEs), which are typical of many freight trucking companies in Asia.

**1.5 CORPORATIONS**

Typically, it is the larger multi-national corporations (MNC) that are considered more sensitive to climate concerns. However, the majority of trucking companies have yet to profile themselves as sustainable businesses. This may be starting to change for the following reasons:

1) Increasing regulation

With all Asian countries committed to the Paris Agreement and up to 40% of National Determined Contributions related to freight and logistics, increasing regulation on the sector can be expected.
2) Rise of the ethical consumer

Conscious consumption is growing in Asia. Environmental responsibility of firms is a crucial factor in “ethical buying” behaviour of Asian consumers. As more corporates start to go green, a green knock-on effect is likely to hit supply chain network and financiers.

1.6 BANKS AND OTHER FINANCIAL INSTITUTIONS

Banks play a key role in the equation as an intermediary as well as an accelerator for green finance. Banks yield their influence over which business and projects receive capital and under what terms and conditions. In doing so, banks can influence the way corporations conduct their business. The increasing awareness and political will over climate change means that banks become aware of their role in promoting green businesses. By lending money to polluting corporations or projects that damage the environment, they can be seen as indirect polluters and expose themselves to large losses in terms of reputation and risk.

Working with governments and NGOs, financial institutions can also introduce green banking products and services in encouraging the transition towards a low-carbon future. For example, in Thailand, a collaboration between the Thailand Department of Land Transport and the Viriyah Insurance Public Company Limited created an exclusive motor insurance for Q-Mark certified commercial trucks. Q-mark is the national standard of transport service quality in Thailand, which among other standards, promotes green and sustainable freight practises in the transportation and logistics industry. This exclusive product enables Q-Mark certified trucking companies to receive special discount for voluntary motor and carrier-liability insurance.

However, these examples are still the exception rather than the rule. The growing field of green finance is largely concentrated to the power sector in Asia. The challenge is creating the awareness among financial corporations to first balance projects with maximising profits for short-term vs longer term sustainability objectives and to educate them about the need and opportunities in the transportation sector. In a recent report co-authored by DBS Bank and the UN Environment put the transport sector as top 3 in commercial viability among all the sectors in need of green financing.
PART 2 – EXAMINING THE GREEN FINANCE OPPORTUNITY IN ASIA-PACIFIC FOR GREEN FREIGHT

A review of 9 countries in the Asia-Pacific region was conducted, and 5 schemes were identified as well-formed schemes targeting or including the green freight sector. These schemes were all government (and international agency) supported, and came either as direct government subsidies (with conditions) or as financing support through credit guarantees or loan-interest subsidies. In Australia, with a carbon credit regime, there is also a secondary support mechanism through the generation and sale of carbon credits from the savings of greening freight.

**AT-ONE-GLANCE**

<table>
<thead>
<tr>
<th></th>
<th>HONG KONG</th>
<th>MALAYSIA</th>
<th>AUSTRALIA</th>
<th>THAILAND</th>
<th>VIETNAM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Who can apply?</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can a shipper apply?</td>
<td>No</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Can a carrier apply?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Applicant requirements</strong></td>
<td>Hong Kong based business conducting transport services in operation for more than a year Must already own vehicles in the vehicle class that applicant is proposing for new technology to be trialed</td>
<td>Legally registered Malaysian-owned companies (at least 70%) Technology must be used in Malaysia</td>
<td>Operating in Australia</td>
<td>Thai company</td>
<td>Small, medium-sized enterprises that are majority Vietnam-owned (at least 50%)</td>
</tr>
<tr>
<td><strong>What can be financed?</strong></td>
<td>Yes if: Alternative fuel technology (biofuel, LNG, electric hybrids, full electric) Diesel technology that shows significant reduction in fuel</td>
<td>Yes if: Alternative fuel technology (biofuel, electric hybrids, full electric, fuel cell) Fuel efficient vehicle</td>
<td>Yes if: Light duty vehicles are emitted 20% less carbon newly sold on-road fleet Heavy duty vehicles</td>
<td>-</td>
<td>Yes if: It is a fuel switch.</td>
</tr>
<tr>
<td><strong>Can I finance the supporting infrastructure?</strong></td>
<td>HONG KONG</td>
<td>MALAYSIA</td>
<td>AUSTRALIA</td>
<td>THAILAND</td>
<td>VIETNAM</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-----------</td>
<td>----------</td>
<td>-----------</td>
<td>----------</td>
<td>---------</td>
</tr>
<tr>
<td>Uses advanced materials</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>powered by electric, hybrid or natural gas engine.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Can I finance a vehicle modification?</strong></th>
<th>HONG KONG</th>
<th>MALAYSIA</th>
<th>AUSTRALIA</th>
<th>THAILAND</th>
<th>VIETNAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, devices that help improve fuel efficiency can be added to approval list</td>
<td>Yes, retrofits allowed.</td>
<td>Only the Emissions Reduction Fund allows</td>
<td>Yes, based on list of eligible technologies</td>
<td>No retrofits are mentioned.</td>
<td></td>
</tr>
<tr>
<td>Cannot be a renewal of an existing loan facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Can I finance operational changes?</strong></th>
<th>HONG KONG</th>
<th>MALAYSIA</th>
<th>AUSTRALIA</th>
<th>THAILAND</th>
<th>VIETNAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>Only the Emissions Reduction Fund allows</td>
<td>Use of telematics included in eligible technologies</td>
<td>No information provided.</td>
<td></td>
</tr>
<tr>
<td>Technology/Project Eligibility</td>
<td>Technology must be new in the industry but already available in the market</td>
<td>Cannot be a renewal of an existing loan facility</td>
<td>ERF projects cannot commence before registration of projects.</td>
<td>Projects must be planned for but not yet implemented</td>
<td>Must be new equipment/technology replacement, or expanding existing production capacity of an established firm/business</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>How much financial support is available?</strong></th>
</tr>
</thead>
</table>

**Size and use of funds**

<p>| <strong>For Vehicles:</strong> HK$12M per applicant; HK $9M per application; HK $3M per vehicle AND capped at 50% of capital cost | <strong>For Devices:</strong> HK $12M per applicant; HK $9M per application; HK $1.5M per device AND capped at 75% of | <strong>Maximum size of loan RM10 million for 10 years</strong> | <strong>Minimum size of loan A$10,000</strong> | <strong>30% of investment, capped at 2,000,000 baht per operator</strong> | <strong>Minimum size of loan US$25,000</strong> | <strong>Maximum size of loan US$1 million</strong> | <strong>Maximum 5-year loan tenor</strong> |
| Maximum size of loan A$5million | Maximum 10-year loan 100% financing possible | | | | | | |</p>
<table>
<thead>
<tr>
<th>How is it disbursed?</th>
<th>HONG KONG</th>
<th>MALAYSIA</th>
<th>AUSTRALIA</th>
<th>THAILAND</th>
<th>VIETNAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grant is reimbursed after product is delivered and ready to use</td>
<td>capital cost + installation</td>
<td>Comes as a reduced rate financing and loan guarantee</td>
<td>Comes as a reduced rate financing</td>
<td>Subsidy is reimbursed after product has demonstrated energy savings</td>
<td>Comes as a loan guarantee and reimbursement of % of investment when environmental savings are demonstrated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What are my obligations?</th>
<th>HONG KONG</th>
<th>MALAYSIA</th>
<th>AUSTRALIA</th>
<th>THAILAND</th>
<th>VIETNAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree to trial metrics and send periodic data updates for a case study</td>
<td>Expected to need to provide a projected environmental savings and MRV methods, as well as a project outcome report.</td>
<td>Not mentioned. Expected obligations as a borrower.</td>
<td>To provide government with energy savings documentation</td>
<td>Expected obligations as a borrower and expected reports on environmental savings.</td>
<td></td>
</tr>
</tbody>
</table>
2.1 HONG KONG

OVERVIEW OF HONG KONG’S SUPPORT FOR GREEN VEHICLES

As vehicles are a large source of air pollution in Hong Kong, the government has been supportive of the transition towards greener vehicles, including electric vehicles since 2011. This especially so for the commercial sector. The existing financial incentives that are applicable to the commercial sector include[xvi]:

- Tax concessions: The First Registration Tax concession is applicable to electric commercial vehicles, electric motor cycles and electric motor tricycles until March 2021.
- Tax deductions: Enterprises which procure EVs are allowed 100% profits tax deduction for the capital expenditure on EVs in the first year of procurement.

- Pilot Green Transport Fund: This grant is applicable to commercial vehicle fleet owners who want to test green vehicles.

THE PILOT GREEN TRANSPORT FUND[xvii]

A $300million Pilot Green Transport Fund was started in 2011. Its purpose is to encourage the testing of green and low-carbon transport technology so as to improve roadside air quality and avert global climate change. With a focus on technology that has yet to be widely deployed, the Fund also seeks to nurture the development of business opportunities for such green transport technologies in Hong Kong. $135million has been deployed to date (May 2018), and the fund remains open for application until it is fully utilized[xviii].

---

**FIGURE 1: HOW THE FUND WORKS**

*Hong Kong Pilot Green Transport Fund (2011 - )*

- HK Environmental Protection Department
  - Approves trial
  - HK$135M Deployed (Apr 2018)
  - HK$300 Million Total
  - Third Party Assessor
  - Deploys grant after technology delivery* (if the subsidy is to cover support systems such as charging stations, these can be released in earlier tranches)
  - Sends periodic trial data and conclusions
  - STEERING COMMITTEE
  - Apply for grant to trial vehicle
    - Can do more than 1 application per applicant
    - Caps:
      - $12M per application
      - $9M per application
      - $3M per vehicle AND 50% of capital cost
  - Apply for grant to trial device
    - Can do more than 1 application per applicant
    - Caps:
      - $12M per application
      - $9M per application
      - $1.5M per vehicle AND 50% of capital cost
  - Technology Provider
    - Identifies provider and purchases technology
  - Applicant (Entity that owns goods delivery vehicles)
    - e.g. of eligible products:
      - Electric and Hybrid Vehicles (Light, Medium, Heavy)
      - Emissions reduction or fuel savings for vehicle (Solar/Electric Inverter A/C units)
    - e.g. of successful applicants to date:
      - DHL Express (Hong Kong) Limited
      - Swire Beverages Limited
      - P&J Logistics

The grant will be reimbursed when the product to be trialled has been delivered and is ready to use.
WHO CAN APPLY

- Hong Kong based business conducting transport services in operation for more than a year
- Must be direct owners of a similar class of vehicle (and currently in use) to be tested (i.e. shippers that don’t have any of their own fleet are not eligible). And fleet size of similar class must be at least 2 times the number of vehicles applied for pilot test
- No company size restrictions (logistic firms with between 30 – 100 trucks are represented in current approved list)

ELIGIBLE TECHNOLOGY

1. Electric Vehicles

<table>
<thead>
<tr>
<th>Vehicle Class</th>
<th>Permitted Gross Vehicle Weight (W) tonnes</th>
<th>Number of Application Approved</th>
<th>Number of Products Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light goods vehicle (non-van type)</td>
<td>W ≤ 5.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Light goods vehicle (van type)</td>
<td>W ≤ 5.5</td>
<td>40</td>
<td>56</td>
</tr>
<tr>
<td>Medium goods vehicle</td>
<td>5.5 &lt; W ≤ 10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>10 &lt; W ≤ 13</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>13 &lt; W ≤ 16</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>16 &lt; W ≤ 24</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Heavy goods vehicle</td>
<td>24 &lt; W</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Non-Franchised bus with 17 to 30 seats</td>
<td>24 &lt; W</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Non-Franchised bus with 31 seats and above</td>
<td>24 &lt; W</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

2. Hybrid Vehicles

<table>
<thead>
<tr>
<th>Vehicle Class</th>
<th>Permitted Gross Vehicle Weight (W) tonnes</th>
<th>Number of Application Approved</th>
<th>Number of Products Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light goods vehicle (non-van type)</td>
<td>W ≤ 5.5</td>
<td>30</td>
<td>48</td>
</tr>
<tr>
<td>Light goods vehicle (van type)</td>
<td>W ≤ 5.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Medium goods vehicle</td>
<td>5.5 &lt; W ≤ 10</td>
<td>16</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>10 &lt; W ≤ 13</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>13 &lt; W ≤ 16</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>16 &lt; W ≤ 24</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Heavy goods vehicle</td>
<td>24 &lt; W</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Because the fund is focused on testing newer technology, the vehicle/technology being applied for pilot testing cannot be something that is already widely deployed. In addition, there might caps at a Fund level of certain technologies that they have already funded previously. However, a similar vehicle can be allowed to be pilot tested across different industries.

To date, the following vehicle type and vehicle classes have been accepted for pilot test are listed above.

Aside from electric and hybrid vehicles, fossil fuel engine technology that involves a substantial degree of innovativeness in engine design or construction to achieve significant improvement in emission control performance or fuel economy will be eligible.

On top of vehicles, devices that will result in direct emission savings and fuel savings are also eligible. To date, for commercial trucks, only solar and electric inverter air conditioning systems are on the approved list.

SIZE AND USE OF FUNDS

For vehicle pilots
- Can do more than 1 application per applicant
- Caps:
  - HK$12M per applicant
  - HK $9M per application
  - HK $3M per vehicle AND 50% of capital cost

For device pilots
- Can do more than 1 application per applicant
- Caps:
  - HK $12M per applicant
  - HK $9M per application
  - HK $1.5M per device AND 75% of capital cost + installation
The funds cannot be used for overhead and maintenance or insurance needs.

Applicants’ obligations

- Ensure they have a vehicle/device provider
- Ensure they are not already receiving subsidies/funding from another government entity or charitable entity

Be willing to share their findings during and after the trial period, this will be in the form of pre-agreed series of indicators to be collected at a mid-term as well as the end of the trial period. Such data is to be collected in a pre-agreed form to HK Environmental Protection Department Secretariat or an identified third-party assessor, where case studies will be co-developed.

2.2 MALAYSIA

OVERVIEW OF MALAYSIA’S SUPPORT FOR GREEN VEHICLES

For the Malaysia government, green technology is seen to be a driver to accelerate the national economy and promote sustainable development. In general the Green Technology Policy is provide direction and motivation for Malaysians to continuously enjoy good quality living and a healthy environment. Since 2010, the Green Technology Financing Scheme has been in place, and green vehicles are a key sector for its support. However, approved applications in this sector has been considerably lower than other sectors.

THE GREEN TECHNOLOGY FINANCING SCHEME (GTFS)

GTFS was introduced by the Malaysian government in 2010 aimed at encouraging local companies and entrepreneurs to be involved in green technology-based projects to support the national green technology agenda. The GTFS was developed with the cooperation of Ministry of Finance, Bank Negara Malaysia, Credit Guarantee Corporation (CGC) and Ministry of Energy, Green Technology and Water to provide companies with access to attractive financing facilities from the Financial Institutions and Malaysia Green Technology Corporation (MGTC) as the implementing agency. As of 31 December 2017, the original GTFS was fully subscribed at RM3.5 billion spread over 319 projects.

The GTFS 2.0 is an extension of the Scheme for 2018 to 2022 with a total financing of up to RM5.0 billion. Besides providing financing facilities, GTFS 2.0 will provide a more attractive package which is financing through green bond / sukuk issuances which will be 100% guaranteed, and enjoy government subsidies at a rate of 2% on coupon / profit.

The Scheme will be opened until 31 December 2022 or upon approval of financing/bond issuance up to RM5.0 billion, whichever is earlier or any subsequent extension on the availability date.

HOW THE FUND WORKS

The incentive is a reduced interest rate on your asset-based loan, that is supported by additional credit guarantee provided by a government related entity. The loan size and caps will be dependent on each bank and banker’s assessment of the applying company as well as the asset.
WHO CAN APPLY

Any Malaysian-owned and registered company that intends to use a new green technology in its projects located in Malaysia can apply. The project must use local and imported technology. There does not seem to be a preference in terms of company size, but the banks are expected to have minimum profitability requirements for loan eligibility.

Although the scheme supports vehicles used in the logistic sector, the fund currently has yet to fund a logistics provider.

ELIGIBLE TECHNOLOGY

The scheme supports the incorporation of green technology in the transportation infrastructure, vehicles and fuel, in particular, bio-fuel, electric vehicle and mass public transport system.

The following list is the current eligible technology relevant to our members:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Sample projects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infrastructure</strong></td>
<td><strong>Sample projects</strong></td>
</tr>
</tbody>
</table>
| Green infrastructure | • Bio fuel refueling station  
• Hydrogen refueling station  
• EV charging station |
| **Vehicle** | **Sample projects** |
| Alternative Fuel and Electric Vehicle (i.e. taxi, bus, etc) | 1. Eco – vehicle  
2. Fuel efficient vehicle  
3. Efficient electric system  
4. Advanced Fuel Cells  
5. Advanced Materials for Transportation  
6. Advanced Motor Fuels  
7. Hybrid and Electric Vehicles |

SIZE AND USE OF FUNDS
The funds can be used for new, retrofitting or expansion projects and energy performance contracting that have yet be funded or financed previously. The maximum amount is RM10 million per group of company that is a technology user with a maximum loan tenor of 10 years.

APPLICANTS’ OBLIGATIONS
At application, applicants are required to provide a calculation to demonstrate the project’s projected impact and to indicate the measurement and verification method and procedures (MRV). At the project’s end, a project outcome report based on this MRV is expected. It is expected that there are other obligations associated to being a borrower with the banks.

2.3 AUSTRALIA

OVERVIEW OF AUSTRALIA’S SUPPORT FOR GREEN VEHICLES
The Australian government has been largely in supportive of the transition to green and higher efficiency vehicles through 2 mechanisms – the Clean Energy Finance Corporation and the Emissions Reduction Fund. Transport has been part of the Clean Energy Finance Corporation investment categories since its inception in 2012, established by the government to drive private commercial funding into green investments. However, investments in this category lags drastically behind green energy production. By the end of 2017, investments towards transitioning vehicles were less than 1/10th of those in the solar PV industryxxvi.

Similarly, the Emissions Reduction Fund, under the Clean Energy Regulator currently has 7 registered projects using the Land and Sea Transport Criteria out of a total of 461 projects.xxiv

THE CLEAN ENERGY FINANCE CORPORATION’S SUSTAINABLE CITIES INVESTMENTxxvii

HOW THE FUND WORKS
The Clean Energy Finance Corporation (CEFC) Sustainable Cities Investment Program has funded banks and vehicle finance companies in Australia to provide discounted loans for clean and green vehicles in support of a transition towards electrification and fuel switching. The total portfolio is $1 billion across a group of banks and finance companies. The participating banks include: ANZ, National Australia Bank, Westpac, Macquarie Leasing, Metro Finance and Eclipxxviii.
WHO CAN APPLY
Based on the CEFC’s mandate, applicants should at minimum have a business that is operating a fleet in Australia. Applicants need to go through a loan application, and as such the banks’ criteria for lending will apply.

ELIGIBLE TECHNOLOGY
The CEFC criteria for eligibility:

Light duty commercial vehicles that have reported carbon emissions at 20% less than the most recent average carbon emissions figures for vehicles sold in the previous year as reported by the National Transport Commission.

Heavy duty commercial vehicles that are powered by an electric, hybrid or natural gas engine.

If your vehicle or fleet transition is approved as part of the Emissions Reduction Fund (see below), you are also eligible for reduced interest rate financing.

SIZE AND USE OF FUNDS
The incentive comes as a reduced interest rate on your asset based loan or lease, and the loan size and caps will be dependent on each bank and banker’s assessment of the applying company as well as the asset. The minimum loan size considered is $10,000 and the maximum loan size $5 million (ANZ), and some banks will allow 100% of cost of asset to be financed.

APPLICANTS’ OBLIGATIONS
There are no explicit additional requirements on top on usual loan servicing requirements stated. However, it is expected that some form of emissions or fuel savings reporting might be required to meet CEFC’s requirements.

THE EMISSIONS REDUCTION FUND

HOW THE FUND WORKS
The Australian government has committed $2.55 billion to purchase emissions reductions credits (ACCUs) from companies in Australia. More than $265 million remains in the fund to purchase further abatement. Companies will be repaid for the credits they generated based on an auction price.

---

**Australia Emissions Reduction Fund**

1. **Clean Energy Regulator**
   - Approves project

2. **Emissions Reduction Fund**
   - A$ 2.30bn Deployed
   - A$ 2.55bn Fund

3. **Applicant (Owner/Operator)**
   - Applies and participates in auction

4. **Agrees to contract at a price per tonne of carbon**

5. **Pays by contracted price**

6. **Reports, get audited, submits carbon abated yearly**

This is a highly stylized diagram. There are several steps in the registration and auction process that applicants will need to familiarize with.
WHO CAN APPLY

Owners and operators of existing trucks as well as other aggregators (such as vehicle suppliers) who are interested in improving the emissions intensity of vehicle fleets can apply for a project to be registered to generate ACCUs, as long as:

- the project will not commence prior to the approval of registration
- the owner/operator can provide three years of historical fuel use and service data
- the vehicle upgrades/replacement are not required by law or funded by other state funding programs.

ELIGIBLE TECHNOLOGY

Companies can achieve carbon abatement for land transport projects through a wide range of options:

- replacing vehicles
- modifying existing vehicles (e.g. installing low rolling resistance tyres)
- changing energy sources (fuels, including biofuels and electricity) or the mix of energy sources used by vehicles, or
- changing operational practices in relation to vehicles (e.g. optimizing vehicle load scheduling)

Projects involving light duty vehicles operators have to involve a fleet of vehicles. Individual vehicles will not be eligible.

Projects involving heavy duty vehicles can be submitted as part of a fleet or as individual vehicles.

SIZE AND USE OF FUNDS

The funds will come from the sale and delivery of credits. Companies are eligible to sell credits by participating in an auction run by the Clean Energy Regulator or through a private sale contract (unregulated by the government). If your project is approved and a contract is made, you receive payment based on how much carbon is abated annually. The current auction price is roughly AU$13.52 per tonne of carbon.

The minimum abatement contract is an abatement of 2000 t/CO₂-e per annum.

APPLICANTS’ OBLIGATIONS

Because the Emissions Reduction Fund is a credit system that involves multiple years’ of carbon abatement, the abatement calculations, record keeping, reporting and audit requirements are strict.

At project registration:

- Do a proper estimation, including by year, of the carbon abatement to be achieved, based on the approved credit estimation method

After project registration and auction:

- Reporting in accordance to requirements to the estimation method, including calculation of actual abatement achieved in the reporting period at least once every 2 years
- Keep records of fuel use and service data used to calculate the emission intensity of vehicle groups or individual vehicles before and after implementing project activities
- Audited by a registered greenhouse and energy (NGERS) auditor
- Where project fails to deliver number of credits promised as part of initial obligation, to top up credits through secondary market
2.4 THAILAND

OVERVIEW OF THAILAND’S SUPPORT FOR GREEN VEHICLES

The Thailand government has put in support for the improvement of energy efficiency in its logistics sector since 2009, in the form of the Transportation Incentive Program administered by the Federation of Thai Industries. In its Energy Efficiency Development Plan (2011-2030), the government outlined a budget for an Energy Conservation Promotion Fund that totalled 5.9 Billion Baht a year, with a particular focus on transportation (an estimated 32% of its budget, including passenger transport). The government also supports programs that promote Eco Driving for Energy Saving in the Transport Sector and the development of a Logistics Management System that is available for all small, medium sized logistic transport providers to better plan and manage load factors.

THE TRANSPORT INCENTIVE PROGRAM SUBSIDY

The subsidy available from the Transportation Incentive Program is for 30% of the investment cost, but not exceeding 2,000,000 Baht per operator. It is now provided as a reimbursement after the energy savings have been documented and provided to the government.

HOW THE SUBSIDY WORKS

The fund is part of the government’s Energy Conservation Promotion Fund and is administered by Federation of Thai Industries, with technical support from its affiliated organization, Institute of Industrial Energy (IIE).

WHO CAN APPLY

This is designed for operators who have analyzed and planned for energy efficiency improvement in their business but implementation has not been made.

ELIGIBLE TECHNOLOGY

The IIE performs tests and analyses to verify a certain technology’s energy savings potential in Thailand before it is eligible for the fund. Currently the list includes low resistance tyres and aerodynamic upgrades, as well as logistic management tools like telematic systems.

SIZE AND USE OF FUNDS

There is a cap of 2,000,000 Baht per operator.

APPLICANTS’ OBLIGATIONS

The applicants now have to submit documents demonstrating the energy savings derived from deploying the technologies before receiving reimbursements.

2.5 VIETNAM

OVERVIEW OF VIETNAM’S SUPPORT FOR GREEN VEHICLES

Since the development and announcement of the Vietnam Green Growth Strategy (2012-2016), there has an emphasis on supporting the greening of various traditional economic sectors. The strategy was supported by the development of several different funds that were supported either by the Vietnam government or other international agencies. Given the importance of the small, medium-sized enterprises (SME) to Vietnam’s economy, several of these funds are targeted at SMEs. One such fund is the Green Credit Trust Fund, which is supported by the Swiss Secretariat for Economic Affair (SECO). Fuel switching for logistic vehicles is an eligible project type for the Green Credit Trust Fund.
The Green Credit Trust Fund (GCTF) provides support to SMEs in Vietnam to make medium- and long-term investments of Vietnam SMEs in cleaner production technology to achieve environmental improvements. SECO will provide up to US$5 million for the GCTF.

The fund can be disbursed in 2 ways:

- SME can borrow through a local financial bank for its green project and the GCTF will provide a guarantee to the local financial institutions for 50% of the principal amount of the green credit.

- After successful installation of the cleaner production technology, if the borrower can demonstrate a reduction of the negative impact on the environment, a part of the investment cost can be reimbursed to the borrower. For example, if a project achieves >30% environmental improvement, 15% is reimbursed; with 50% environmental improvement, 25% is reimbursed.

Three banks are part of the program – Techcombank, Asia Commercial Bank, Vietnam International Bank.

WHO CAN APPLY

SMEs (either private sector or state-owned enterprises) with more than 50% Vietnamese ownership can apply for any technology project which will reduce greenhouse gases, ozone-depleting substances and other organic pollutants by at least 30%.

As this fund is meant to support a loan, SMEs must first pass the initial financial appraisal by the bank, and then also pass a technical appraisal by the Vietnam Clean Production Center (NCPC) and SECO.

ELIGIBLE TECHNOLOGY

A wide range of technologies can be eligible, including those that increase energy efficiency and fuel switching.

SIZE AND USE OF FUNDS

Since the funds are going to be disbursed based on a loan, the size limits for the loan is between US$25,000 and US$ 1 million per project. It can have a maximum maturity of five years and will be on market-based interest rates. Funds can only be used to finance new equipment/technology replacement, expanding existing production capacity of an established firm/business.

APPLICANTS’ OBLIGATIONS

It would be expected that applicants need to comply to the bank’s credit requirements, as well as submit environmental data to demonstrate improvements.
PART 3 – NEXT STEPS TO HARNESSING GREEN FINANCING OPPORTUNITIES

Upon a review of these existing financing schemes, it is clear that a key driver for the grant/financing provider is delivering the desired carbon savings or air quality improvements. As such, having a good grasp of how to quantify these savings is critical.

There are some first steps every company can take before reaching out to these financing providers:

- **Step 1:** Stock-take of your existing fleet and calculate greenhouse gases (and other pollutants) emission baselines;
- **Step 2:** Review vehicle market and eligibility lists for new technologies eligible for financing;
- **Step 3:** Estimate the greenhouse gas and pollution savings from a switch based on internationally and locally accepted estimation methodologies;
- **Step 4:** (Optional) Design metrics and a process supporting the systematic collection of these metrics

We recommend for all companies interested in harnessing green financing opportunities for trialling a new technology or upgrading your fleet to at least complete Steps 1-3.

As part of the GFA Label application process, you would have completed a stock-take of your existing fleet, and GFA can provide an estimate of your baseline GHG emissions based on the information. With Step 1 complete, GFA can assist interested companies to conduct the remaining steps to increase success in obtaining the required financial support for your transition.
**GLOSSARY**

<table>
<thead>
<tr>
<th><strong>Carrier</strong></th>
<th>Companies that provide logistic services and directly operating vehicle fleets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shipper</strong></td>
<td>Companies that contract logistics services to deliver its products to markets</td>
</tr>
<tr>
<td><strong>G20</strong></td>
<td>The G20 (or Group of Twenty) is an international forum for the governments and</td>
</tr>
<tr>
<td></td>
<td>central bank governors from Argentina, Australia, Brazil, Canada, China, the</td>
</tr>
<tr>
<td></td>
<td>European Union, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia,</td>
</tr>
<tr>
<td></td>
<td>Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom, and the</td>
</tr>
<tr>
<td></td>
<td>United States; holding Spain a status of permanent guest. Founded in 1999, the</td>
</tr>
<tr>
<td></td>
<td>G20 aims to discuss policy pertaining to the promotion of international financial</td>
</tr>
<tr>
<td></td>
<td>stability.</td>
</tr>
<tr>
<td><strong>MRV</strong></td>
<td>The process of measuring, reporting and verifying carbon emissions and reductions</td>
</tr>
<tr>
<td></td>
<td>that helps to ensure transparency and support effective climate finance efforts.</td>
</tr>
<tr>
<td><strong>ACCUs (Australian</strong></td>
<td>A unit issued to a person by the Australian Government’s Clean Energy Regulator by</td>
</tr>
<tr>
<td><strong>Carbon Credit Units</strong></td>
<td>making an entry for the unit in an account kept by the person in the electronic</td>
</tr>
<tr>
<td></td>
<td>Australian National Registry of Emissions Units. Each ACCU issued represents one</td>
</tr>
<tr>
<td></td>
<td>tonne of carbon dioxide equivalent (tCO2-e) stored or avoided by a project.</td>
</tr>
<tr>
<td><strong>Carbon Abatement</strong></td>
<td>The reduction of the amount of carbon dioxide that is produced when coal and oil</td>
</tr>
</tbody>
</table>
REFERENCES


v  2017 “China leads world on green bonds but the benefits are hazy”, Financial Times, 4 May 2017, Available: https://www.ft.com/content/84ac893a-028e-11e7-aa5b-6bb07f5c8e12


xxi June 2015, “Green Technology Financing Scheme Malaysia”, Presentation at UNFCCC Climate Change Conference at World Conference Center, Bonn, Germany.


xxiii Ibid.

xxiv Application Form, Green Technology Financing Scheme, available: www.gtfs.my/page/application-form

xxv Available at: https://www.gtfs.my/page/project-eligibility-criteria-transport-sector


xxxi Emissions Reduction Fund Schematic, Clean Energy Regulator, Australian Government. Available at


xxxvii Phone Interview on 26th June 2018 with Mr. Thibodee Hamprasert, Executive Committee, Institute of Industrial Energy, Thailand.

xxxix  Vietnam Climate Finance Options, Vietnam Ministry of Planning and Investment. Available: