



SUSTAINABILITY REPORT

2017

Over the years, Nam Cheong Limited (“the Company” or “Nam Cheong”, and together with its subsidiaries, “the Group”) has taken many initiatives which are essential to sustaining of the Group’s businesses.

Given the increasing vessels’ fleet size, the Company constantly strives to improve amongst others, cost and operational efficiency, crew’s health, safety and welfare, while continue to commit to environment and society. Nam Cheong’s sustainability strategy is aligned with its vision of “creating consistent value growth through innovative supply chain solutions and unique partnerships” where business viability is ensured during the downturn in oil and gas industry without jeopardizing the environment for future generations.



In the **NEW BUILDING** sector, the Company have invested in green technology and developed guidelines to enhance the vessels' productivity and efficiency while continue to be responsible in social and environment development.



NEW BUILDING

Since 2013, Nam Cheong has collaborated with some well-known ship designers with the intention to design vessels of advance technologies with features that are more fuel efficient, environmentally friendly, operationally flexible and cost-effective. Nam Cheong has since rolled out a few ship designs aiming at substantial reduction of CO₂, NO_x and SO_x. SO_x is further reduced with the burning of marine gas fuel that contains much less than 0.5% Sulphur (well before regulation comes into force on 1 January 2020). The electric propulsion configuration also incorporated the closed bus-tie concept and provision of future upgrade to battery hybrid.



Nam Cheong is now working on greater use of LNG fuelled and battery technology in the next phase of ship design development.

NEW BUILDING

Measures are taken to promote environmental awareness

Nam Cheong's engineering team continues to observe the latest development in statutory regulations especially in environmental issues. The team holds regular internal meetings to provide essential updates, to discuss on how to comply with the latest regulations, proactively or voluntarily.

For some regulations such as ballast water treatment systems, Nam Cheong took a proactive role in implementing the D-3 solution on some vessels built in 2012 (years ahead of the BWM Convention was enforced on 8 September 2017).

Regulations such as the Ship Energy Efficiency Management Plan (SEEMP) required by regulation 22 of MARPOL Annex VI, where vessels are required to comply with the mandatory Part I, provides a possible platform for monitoring of ship and fleet efficiency performance over time, and some options to be considered when seeking to optimize the performance of the ship. As part of the planning process, the Company is considering to voluntarily implement Part II, which is to provide the methodologies ships of 5,000 gross tonnage (Nam Cheong's vessels have lower gross tonnage) and above should be used to collect the data required pursuant to regulation 22A of MARPOL Annex VI and the processes that the ship should use to report the data to the ship's Administration or any organization duly authorized by it.

NEW BUILDING

Nam Cheong aims to comply a number of regulatory compliances related with carbon dioxide emission and environmental issues

- IMO regulation on ballast water BWM Convention was initially supposed to be enforced on 8 Sep 2017 but IMO amended the deadline for ships to install BWTS from date of 1st IOPP survey after the Convention's entry into force to 1st IOPP after 8 Sep 2019, effectively adding 2 years to the global installation process, which would then be completed by 2024 instead of 2022. On this, some the vessels are already in compliant and the Company will strive for the remaining vessels to be in compliant before the regulation is enforced.
- IMO regulation on diesel engine exhaust emission Tier III (NO_x reduction) (was enforced on 1 January 2016), which only applicable for vessels going to NECA areas. For OSVs, the probable solution is to burn LNG and greater use of advance energy storage.
- IMO regulation on Ship Energy Efficiency Management Plan (SEEMP) required by regulation 22 of MARPOL Annex VI – Parts I & II
- IMO regulation on use of low Sulphur fuel $\leq 0.5\%$ Sulphur (to be enforced in 1 January 2020), of which the Company already in compliant thereof.

NEW BUILDING

Nam Cheong also watches over carbon footprint, certain measures are taken to address this issue

Battery power will be used in electric propulsion to enable vessels to operate on battery partly at seas and fully in port areas. Charging battery may switch from currently ICE driven generator (except those below 130kW diesel) to fuel cells. Fuel cells can operate on hydrogen, bio-fuels (ethanol), methane (LNG), ethane, VOC mix with LNG, and so on.

Nam Cheong will be working tirelessly towards reducing carbon footprint (marine greenhouse gas (GHG) emissions) up to 35% by 2020, 40% by 2030 & even 75% by 2050 as committed by IMO. Nam Cheong will consider and incorporate features that help to minimize global warming potentials (GWP) and other environmental pollutants, and to counter disruptions caused by economic reasons while enabling technologies.



NEW BUILDING

The features include:



- Dual fuel engine utilizes high pressure diesel cycle for higher efficiency and power concentration than those following the low-pressure Otto cycle in burning gas mode – use of LNG &/or bio-fuels
- Diesel electric propulsion with waste heat recovery (great use of electric)
- Diesel electric propulsion with battery hybrid can replace one or two main generators (greater use of electric)
- All-electric vessel with advance energy storage (batteries) & fuel cells (greatest use of electric)
- Optimized vessel size & hull shape
- Reduced ballast water needs
- Hull coatings
- Big data acquisition & analytics
- Automation towards autonomous unmanned control
- Propulsion efficient devices
- Speed optimization, speed reduction & weather routing

NEW BUILDING



It is inevitable that marine transportation goes through radical changes, such as going electric and autonomous, and likely in the future, merging of electric propulsion with self-sailing technology.

From newbuilding perspective, the prospect of totally eco-friendly power plant and vessel utilizing battery hybrid with charging from sustainable energy sources are promising, in view that batteries can now replace one or two of the four main engine and generator sets, without compromising security or service standards.

In the future, the Company look forward to more futuristic development of autonomous unmanned control with advance control algorithm, AI, communications or navigation, sensors (LIDAR), more secured & safer computing hardware/software.

In the **SHIP CHARTERING** department, fuel efficiency has always been a priority and the Company has taken proactive initiatives to address the issue

As a leading offshore support vessels provider, Nam Cheong is committed to develop initiatives in reaching the ultimate goal of building fuel efficient vessels with low-carbon dioxide emission. Such initiatives are taken through advance ship design and use of technological innovative equipment, which shall comply with the new environmental rules and regulations, yet able to produce the least possible carbon foot-prints in the emerging "Carbon Market".



SHIP CHARTERING

Nam Cheong remains dedicated to achieve innovations that improve the fuel consumption

Nam Cheong's NCA80E model for anchor handling supply tug vessel is an innovation designed and engineered in Singapore.

The design offers the latest state of art electric propulsion technology, achieves good fuel economy with high quality equipment of zero or low energy losses with better specific fuel consumption, vessel's operational flexibility, yet at a competitive building cost.

This design is also ready to incorporate battery hybrid to further improve fuel consumption.



SHIP CHARTERING



Nam Cheong remains dedicated to achieve innovations that improve the fuel consumption

Nam Cheong's NCP4000E model for platform support vessel is another innovation designed and engineered in Singapore, is equally exciting if not better than the NCA80E.

It adopts some of the latest marine technologies yet sensible and simple enough to operate with fuel efficiency element. This design incorporates the closed bus-tie concept for better sharing of generators on loads (lesser number of generators in operation) without compromising in the operational safety. It also prepares for battery hybrid solution.

SHIP CHARTERING

Incorporating the ideology of fuel efficiency at all levels

Nam Cheong has a strict parameter for recruitment of crew which largely based on the crew's high competency and relevant experience. The crew will be trained to operate on the latest technology equipment or system and to achieve on fuel saving during the operation. Nam Cheong encourages the crew to take pride in doing a good job for vessels' operation. Good performance crew will be retained in the talent pool and be deployed to these newer and better designed/built vessels.

Nam Cheong has plans to capture the fuel consumption data and to quantify the real saving, and subsequently carry out incentive scheme in near future.

The technical staff are formed by a pool of talented and committed engineers. The biggest incentive for engineers is to be recognized for their contributions. Recognition is the driver for continuous improvements. It motivates the staff to search for newer technologies to further lower carbon dioxide emission for low carbon shipping (fuel efficiency).

The rewards come when the products they developed contributes to healthy profits to the Company, in sales and/or in fuel saving.

SHIP CHARTERING

Focus of fuel efficiency yielded remarkable result for the Company's fleet

The features in the fuel-efficient vessels include:

- Use of medium speed diesel engines for main generators (instead of high speed diesel) which generally results in saving of 5-10 g/kWh (lower carbon dioxide emission)
- Use of medium speed diesel engines for main generators to reduce the maintenance cost, thus reduce parts renewal and enable longer mean time between overhaul
- Use of "no-loss" concept electric propulsion can save about 5%-7% of energy (lower carbon dioxide emission)
- Use of diesel electric propulsion which allows operational flexibility, hence fuel saving (lower carbon dioxide emission)
- Use of "closed bus-bar" concept which allows greater sharing of generators on loads with a reduction in number of generators operating, hence fuel saving (lower carbon dioxide emission).
- Use of marine gas oil where good quality fuel with Sulphur content much lesser than 0.5%, resulting in lesser sulphur dioxide emission, lesser air pollutants and reduced handling of residues from filtration/separation

SHIP CHARTERING

Nam Cheong will continue to pursue new ideas and innovations in reducing carbon dioxide (marine greenhouse gas) and other environmental unfriendly emissions of the vessels the Company designs and builds in following approaches:

- Short term – newer power plant configuration, use of more energy efficient equipment, and greater use of LNG fuel and batteries.
- Long term – eliminate the use of fossil fuel oil and replace with LNG and other sustainable energy sources.





In the **SHIP MANAGEMENT** sector, the Company aim to increase cost and operational efficiency through continuous improvements and innovations.



SHIP MANAGEMENT

The Company articulates the commitment to deliver value to all stakeholders through sustaining growth in businesses. Parallel to such commitment, **SK Offshore & Marine Sdn Bhd (SKOM)** was set up in April 2016 as the ship management arm of for the Nam Cheong Group for better control of costs and operational efficiency.

Operating costs consist primarily of crew costs, repair and maintenance costs, insurance costs, fuel, lube oil and supplies costs. In the current market, an oversupply of vessels and the corresponding increase in commercial competition have adversely impacted vessels utilisation, rates and contract terms.

SKOM strives to manage the principal costs factors by having in place a strategic plan where SKOM can rely on its marine expertise to extract the most value out of its assets. This is facilitated by:

- Active downtime program to minimise holding costs for vessels between contracts whilst developing a permanent owned and operated safe refuge where idle vessels can be placed in compliant warm layup at even further reduced costs.
- A culture of cost management has been instilled throughout the vessel operations with primary focus on minimising all discretionary spending whilst ensuring that cost savings are not made at the expense of the quality, reliability and safety of operations.
- Focus on preventive maintenance.
- Develop more accurate key performance indexes to measure vessels' performances in a long run.
- Establish a strong maintenance team to ensure consistent quality maintenance.
- Building in-house competence focusing on problem solving, innovation and transfer of experience.
- Enhance engineering and operational risk control measures including but not limited to, hazard and risk management processes, quality audits, planned maintenance programmes, compliance programmes, emergency preparedness and contingency plans and preferred supplier processes.

Across the ship management activities, SKOM continues to keep a strong safety record

SKOM prides itself on its continuous improvement culture and even more so in the Health and Safety performance. A dedicated Health, Safety, Security and Environment (HSSE) department works to supply and implements support strategies to identify critical HSSE controls.

The Company's target includes zero personal injuries, no harm to the environment and no damage to, or loss of, equipment and property. Considerable efforts are made on various levels to ensure this target was achieved in 2017. In the same year, the Company has established a group of competent and reliable technical and operation staffs to ensure all vessels are well-maintained and sufficiently equipped to operate in a safe environment.

On board and ashore, SKOM believes that the transfer of experience is an important factor to create and maintain a professional HSSE culture and essential to continuously improve the safety performance. SKOM puts great emphasis on a safe work environment and adequate time for preparation of every job operation.

SKOM Safety Culture is based on a Safety Management System (SMS) based on compliance to IMO regulations. An external annual audit is conducted on SKOM by a compliance authority, in this case Lloyds Register to verify that the company complies with the requirements of the International Maritime Organisation Code for the Safe Operation of Ships and Pollution Prevention. An internal audit program is also conducted annually to further strengthen and give emphasis to the audit program and ensure that updates on any new regulations are implemented and adhered to in the company. All vessels operated by SKOM are also audited annually by Lloyds Register under the same IMO Legislation through internal audit program.

SKOM safety performance for 2017 based on the industry standard measurement Total Recordable Case Frequency (TRCF) stands at 2.05. This is a reduction of more than 50% compared to 2016 and included zero Lost Time Injuries (LTI) for both years, marking a very commendable performance by the Company.

SHIP MANAGEMENT

SKOM remains committed to achieving the highest standard of environmental performance for all vessel activities and to meeting of environmental compliance standards



Two key areas of mitigation are the releasing of environmentally hazardous substances which reduces air and water pollution and implementing measures to reduce fuel consumption. SKOM has all the benefits of a globally led drive to reduce the environmental footprint. Being one of the industries newest fleets and by making use of available technical solutions, this has allowed SKOM to mitigate against the accidental outflow of any unwanted hazardous substances. This coupled with strong procedures and the well-trained competent crew led to zero discharge incidents were recorded for the year.

SHIP MANAGEMENT



Throughout the year SKOM continues to have strong and dedicated focus on fuel consumption, and the efforts made within this area have generated a positive impact and more awareness of efficient fuel usage. New procedures were set in place to monitor and oversee daily fuel consumption in order to identify areas where efficiency can be higher and reduce SKOM's overall fuel costs. Systems for the measuring of fuel consumption in various operations have also been the basis of a detailed study.

SKOM's environmental policies, management plans and supporting procedures are reviewed periodically to ensure potential environmental impacts are identified, assessed and controlled. As part of the Company's continuous improvement process, SKOM's environmental policy leads the way to managing the vessels' operations in a sustainable manner and minimizes the global environmental impact.

SKOM prioritizes transparency in client relationships yielding high standards of vessels' operation

SKOM does not tolerate any form of unethical behaviour from any employees, both on and offshore, and expect all employees to work to the highest ethical standards. SKOM requires suppliers and contractors to equivalently display the highest ethical standards and strongly encourage any form of unethical behavior to be reported to the management of Nam Cheong Group.

SKOM adhered to 7 basic principles to steer the business through a very challenging business environment

The 7 basic principles have guided SKOM to be considered not only a reliable, responsible and preferred vessel operator, but to have the level of knowledge and skills necessary to participate with the clients in providing assets and solutions for future. The 7 basic principles being:

- Comply with statutory rules and regulations in order to ensure that all employees are able to execute their work under safe, healthy and proper working conditions.
- Strive to eliminate all known risks that may result in accidents, injuries, illness, damage to property or to the environment.
- Continue to build a well-trained professional workforce.
- Integrate environmental sustainability into the vessel operations.
- Build a culture of cost management to drive cost efficiencies both onboard and ashore.
- Avoid and report any form of unethical behavior.
- Ensure that the responses to any clients' requirements are dealt with professionally in a timely and positive manner.

At Nam Cheong, the Company is committed to enhance working environment by providing various education and training programs which will facilitate the smooth and effective operation of the Company.



The knowledge of the crew is vital for the safe and secure operation of any vessel. Such knowledge includes good seamanship and understanding of any work duties and tasks to be undertaken. In order to ensure that vessels were manned with dedicated, qualified and proficient seagoing personnel, SKOM helps to identify, monitor and arrange for the development of officers and crew. The company also ensure all necessary training needs, with courses delivered either internally or externally are duly executed in accordance to the relevant charter requirements. Training needs are also identified through crew evaluation reports, the various compliance audits and information provided by floating personnel during their visits on board. Internal training is provided on board of the vessels by members of the shore based team and also by running regular drills. Utilizing funds drawn mainly from Human Resources Development Fund, the company had invested a total of S\$30,000 on education and training for the employees. The employees attended trainings that focused on onboarding experience, upgrade of skillset and industry compliance.



Apart from the crew, every employee of the Company is given the benefit to learning and training for expedite acquisition of the knowledge, skills and abilities required for effective job performance. Employees may attend to the relevant courses or training provided in house or by external sources. Courses and trainings are open for selection to employees, with trainers who are expected to be fully equipped with specialized knowledge and experiences. Most of the trainers are registered with SG Skills Development Fund, Malaysia Human Resources Development Fund, or relevant industry authorities.

Under the human resource initiatives, one of the Company's continuing environmental sustainability measures that was initiated is to instill eco-friendly printing to its employees. The Company encourages employees to practice the 3R policy whenever and wherever possible, which is to Reduce, Reuse and Recycle when printing the Company's documents.

2017 is an active year for education and training. The Company firmly believes that continuous education and training of the employees contribute essentially towards the Company's business growth. With the efforts to foster a safer and healthier workplace, the Company will do better to protect the people and environment. Competent and motivated talents shall yield higher productivity, efficiency, quality and greater results that are consistent with the Company's goals, objectives and strategies.

At Nam Cheong, everyone is encouraged to develop feasible solutions for a range of social issues

As part of the Company's review to conserving and preserving the surrounding environment, the Company has made sustainable environmental development an integral part of the corporate social responsibility programme. Nam Cheong also recognises the importance of giving back to society and participated in initiatives that care for underprivileged children and marginalised members of the community.

The Company has adopted the following:

"Community Initiatives": Nam Cheong has directly and indirectly contributed to society via the creation of employment and business opportunities to Malaysians and Singaporeans. In addition, the Group actively supports government agencies, such as the marine department in its community programmes and participates in other social and cultural welfare for local communities.

The Company funded the Dignity for Children's Foundation which provides disadvantaged children with quality education and empowers them to break out of the poverty cycle. Established in 1998, it currently has more than 900 students.

Furthermore, Nam Cheong (through Tan Sri Datuk Tiong, the Executive Chairman) has been actively involved in various clan associations and business chambers. In addition to his contributions such as the sponsoring of school developments, scholarship programmes and other initiatives that aim to bridge gaps in the community, Tan Sri Datuk Tiong also sits on various school boards.