

NATIONAL OGSE INDUSTRY BLUEPRINT

2021-2030

ABRIDGED REPORT



ECONOMIC PLANNING UNIT
PRIME MINISTER'S DEPARTMENT



The Malaysia OGSE industry as a whole is undergoing a significant transformation, with OGSE companies working to reshape their business models and implement strategies to weather the storm.

Their strategies to become more resilient and competitive tie closely to the Government's continuous efforts in developing the capabilities of the OGSE industry. In time to come, the Government aims to intensify local OGSE development for global competitiveness whilst capitalising on global energy's shift to Asia to further enhance Malaysia's position as OGSE gateway of the region.



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MESSAGE FROM

MINISTER IN PRIME MINISTER'S DEPARTMENT (ECONOMY)



Pivoting Malaysia's OGSE Industry
Towards

ENERGY TRANSITION

Malaysia's Oil & Gas, Services and Equipment (OGSE) industry has played a significant role in the country's oil and gas sector since the 1980s. In recent years, the O&G industry has pivoted towards producing a greater share of sustainable energy while at the same time, balancing affordability, access and job creation.

In this regard, Malaysia has made notable progress. In accordance with the international Paris Accord as well as Malaysia's Shared Prosperity Vision 2030 and the 12th Malaysia Plan, Malaysia intends to continue adding more renewables into our energy ecosystem. The SPV 2030 sets out the framework that will guide Malaysia's economy towards becoming more sustainable and inclusive by the year 2030. Under the 12th Malaysia Plan, economic empowerment, environmental sustainability and social re-engineering, will among others, guide Malaysia's future socioeconomic trajectory.

Guided by these policies and plans, the O&G industry will remain an important driver of Malaysia's economic growth. However, as the world transitions to renewable forms of energy, Malaysia must be at the forefront of this change, while at the same time, endeavour to produce its oil and gas as cleanly as possible. The country's OGSE firms have a unique opportunity

to contribute in this regard by tapping into their technological prowess and creating low-carbon tech solutions. This will require local OGSE companies to innovate and harness efficiencies in order to grow their businesses sustainably.

The COVID-19 pandemic has increased the urgency for the OGSE industry to pivot towards a more sustainable business model in line with the inevitable transition of energy. It is with this view that the Government has developed this National OGSE Blueprint, aimed at charting the course for the industry to achieve sustainable growth and competitiveness.

I am confident that with the active involvement of all stakeholders, Malaysia's OGSE industry will continue to flourish and play an important role in the evolution of energy towards a low-carbon sustainable future.

Salam Hormat,

DATO' SRI MUSTAPA MOHAMED

Minister in Prime Minister's Department (Economy)

MESSAGE FROM

DIRECTOR GENERAL, ECONOMIC PLANNING UNIT PRIME MINISTER'S DEPARTMENT

Strengthening the OGSE Industry to Achieve Malaysia's **ECONOMIC AND ENERGY ASPIRATIONS**

Energy, particularly Oil & Gas, have played a pivotal role in global economic development since the beginning of this century, especially in resource-driven nations like Malaysia.

To this day, Malaysia's oil & gas (O&G) industry remains to be a significant contributor to Government revenue and a critical driver of growth for the nation. As a vital component of the O&G industry, the Oil and Gas Services and Equipment (OGSE) industry also represents a key contributor to national development efforts. Therefore, the health of the OGSE industry remains in the country's best interest to fulfil its potential of contributing to the country's development agenda.

Nevertheless, the OGSE industry is at a critical crossroad. While the nation has had to contend with effects of the COVID-19 pandemic, industry players must also prepare for shifts in the market and energy transition, which will require the industry to not only participate but also compete in the renewable energy sector.

Fortunately, the industry is rising to these challenges and embarking on bold transitions to remain relevant and thrive in the future. Recognising these headwinds,



this National OGSE Blueprint 2021-2030 envisions Malaysian OGSE companies to achieve long-term success while supporting the industry in scaling up and diversifying into relevant adjacent industries. To ensure the implementation of the Blueprint and to achieve its desired objectives, cooperation with various parties and stakeholders will take place. This will be coordinated by Malaysia Petroleum Resources Corporation (MPRC), a dedicated agency to spearhead the development of OGSE industry.

This Blueprint will also enable the industry to better compete for opportunities abroad and across sectors, widen their revenue streams and strengthen their profitability in a sustainable way. PETRONAS, the national oil & gas company, will also be more crucial than ever in this energy transition journey.

With these components in place and the Blueprint serving as a guide for the way forward, I am optimistic the Malaysian OGSE industry will be well-positioned to transform into one that is robust, resilient and globally competitive. It is also hoped that this Blueprint will serve as guidance to the OGSE industry towards long-term solutions that will contribute to the country's socioeconomic development.

Salam Hormat,

YBHG. DATUK SAIFUL ANUAR BIN LEBAI HUSEN
*Director General
Economic Planning Unit,
Prime Minister's Department*

EXECUTIVE SUMMARY

Malaysia's Oil & Gas, Services and Equipment (OGSE) industry represents a substantial share of the National economy, accounting for an annual revenue of more than RM65.1 billion¹ recorded by over 4,000 vendors which employ approximately 59,000 core talents². Currently, the OGSE industry contributes 5%-8% to the country's gross domestic product (GDP), directly servicing Malaysia's oil & gas (O&G) industry that made up 14.5% of GDP and 13.8% of Government's revenue in 2018.

Notwithstanding the substantial growth of the OGSE industry in Malaysia, the industry faces constraints in achieving further value creation, having already endured reversal in value following the 2014-2016 oil price crash which has led to a persistently low oil price environment. Additionally, the entire oil and gas industry has risen to the urgent call for energy transition, which sees the energy industry moving towards a more sustainable model that is focused on renewables and less dependent on fossil fuels.

Among the challenges to the enhancement of value within the Malaysian OGSE industry includes industry fragmentation and concentration in low complexity work scopes with a high focus on domestic revenue. This scenario has resulted in various challenges for local OGSE companies in building financial strength, increasing technological sophistication, accessing industry-ready skilled talent, developing export-ready products and services, and growing Bumiputera capabilities in the sector.

Against this backdrop, it has become imperative for Malaysian OGSE players to transform and adapt to the market's rapidly evolving needs and expectations to ensure greater competitiveness and long-term sustainability.

These factors and conditions have driven the development of this National OGSE Industry Blueprint 2021-2030, which aims to build greater competitiveness among Malaysian OGSE companies to expand into new markets abroad and enable these firms to explore opportunities to move to relevant adjacent industries that may require similar expertise and standards of work, such as in the renewable energy sector.

This Blueprint is anchored on the following core objectives to realise the vision for the OGSE industry:

- **National GDP growth**
- **Sector employment**
- **Export development**
- **Fiscal contribution**

The vision of the Blueprint is to develop a **robust, resilient, and globally-competitive** Malaysian OGSE sector which contributes to the **sustainable development of National priorities**. Based on this vision, the Blueprint has identified four strategic pillars to spur the industry effectively and inclusively:

- **Competitiveness**
- **Resilience**
- **Sustainability**
- **National development**

Successful implementation of this Blueprint will see the industry undergo significant changes and leverage on its strengths while addressing areas for improvements, to ensure the industry continues to flourish by 2030. While the OGSE industry is currently a major component of Malaysia's economy, a sound and robust implementation of the Blueprint will **see greater contribution to the country's GDP to around RM40 billion from current levels of around RM20 billion**. The sector is expected to continue to be a major employer of skilled and semi-skilled talents, and employ around 60,000 people. Greater emphasis and push for innovation should see a **threefold increase in patents** filed by local OGSE inventors, making Malaysia one of the regional leaders in technology development for OGSE.

¹ OGSE100: FY2019 Top 100 OGSE Companies in Malaysia

² PETRONAS Activity Outlook (2019-2021)

EXECUTIVE SUMMARY

The Government is also aiming for the sector to further develop its export capabilities and financial resilience whilst also ensuring sustainability remains a top agenda for the industry. These goals will be reached jointly. For the OGSE sector to continue to flourish in 2030, progress must be recorded in all four strategic pillars.

In formulating this Blueprint, 31 recommendations were identified to drive improvements in the OGSE industry and address specific gaps which exist in the Malaysian market. Of these, 10 were carved out as flagship initiatives which will anchor the implementation of the Blueprint. The 10 flagship initiatives are as follows:

1. Government point of contact for OGSE
2. Industry consolidation
3. OGSE company recognition
4. Applied R&D Centre
5. Tech adoption financing, tax deductions & tariff waivers
6. Overseas researcher outreach programme
7. Consortiums for OGSE players with facilitation of seed financing
8. Grants/tax breaks to OGSE segments which are nearly export-ready
9. Mitigation of export risk through debt collection, export risk insurance and arbitration
10. Energy Export Fund

The Blueprint sets out the case for change, objectives, implementation approach and impact and Key Performance Indicators for each of the 10 flagship initiatives. Additionally, the Blueprint has identified an action plan to be implemented in phases beginning in 2021, which will allow the Malaysian OGSE industry to move towards capacity and capability-building in the medium-term and establishing a regional and global presence in the long-term. The Government will embark on the non-flagship initiatives after the 10 flagships initiatives are underway.

To ensure effectiveness and accountability in implementing the Blueprint's initiatives, this document also sets out the governance model, made up of a cross Government-industry team and representation across Government and industry in the ownership and implementation of initiatives.

INTRODUCTION

TRANSITIONING TO A SUSTAINABLE FUTURE

Malaysia's Oil & Gas, Services and Equipment (OGSE) industry is a sizeable component of the National economy, with an annual revenue of more than RM65.1 billion (2019)³ from over 4,000 vendors employing approximately 59,000 core talents⁴. The OGSE industry today contributes 5%-8% to the country's gross domestic product (GDP), directly servicing Malaysia's oil & gas (O&G) industry that contributed 14.5% of GDP and 13.8% to the Government revenue⁵.

Having earlier recognised a need to move the Malaysian OGSE industry higher up the value chain, in 2011 the Government established Malaysia Petroleum Resources Corporation (MPRC) to advance the OGSE industry and transform the country into a thriving regional hub for OGSE, anchoring on Malaysia's strategic geographical location. Its roles include providing trade and investment facilitation services to attract international players to establish their regional bases in Malaysia; and implementing industry development initiatives on technology and innovation, human capital development, market access and internationalisation; and access to finance facilitation. It also provides recommendations to the Government on promoting the globalisation of local OGSE capabilities in the upstream, midstream and downstream segments.

RM
65.1b
REVENUE

>4K
VENDORS

~59K
CORE
TALENTS
EMPLOYED

5-8%
GDP
CONTRIBUTION

INTRODUCTION

TRANSITIONING TO A SUSTAINABLE FUTURE

The national OGSE industry has recorded significant progress in the last three decades. However, in recent times, the industry has become more fragmented, with 98% of vendors consisting of small and medium-sized enterprises (SMEs). The industry is also concentrated in low complexity work scopes with a high focus on domestic revenue. This scenario has resulted in various challenges for local OGSE companies in building financial strength, increasing technological sophistication, accessing industry-ready skilled talent, developing export-ready products and services, and growing Bumiputera capabilities in the sector.

In the global context, the OGSE industry has not been spared from the pressure of the low oil price environment that has persisted since 2014. Shareholder value had already reversed approximately 60% by the end of 2019, with value creation further depressed with the emergence of three major events in 2020: the unprecedented COVID-19 crisis, the early-2020 OPEC+ disagreement on supply cuts and the storage shock that quickly followed amid an oversupply in the oil market. With O&G operators reducing capital expenditure amid this environment, these developments have further erased 50% of the market capitalisation of OGSE firms since the start of 2020.

Against this backdrop, the OGSE industry has undergone a wave of consolidation globally, while many firms are still showing increasing signs of distress and insufficient liquidity. The risk to the OGSE sector will remain high in the short term, including in Malaysia.

In the longer term, the world is also preparing for an energy transition away from oil and gas and into renewables. Based on 2020 estimates, the economic recoverable resource volume stood at 7.3 billion barrels⁶ of oil equivalent (Bboe) with a production life of about 12 years. There is still remaining non-economical recoverable volume which requires technology and capital intensive investment to extend production life up to 29 years. At the same time, Petroliaam Nasional Berhad (PETRONAS) has announced plans to achieve net zero carbon emissions by 2050. This will see PETRONAS not only reducing its carbon footprint operationally, but also investing more in renewable energy⁷. Currently, PETRONAS plays an essential role in Malaysia's O&G industry as the custodian of the country's oil and gas resources. As a fully integrated, multinational oil and gas company, it is involved in upstream and downstream operations. It also serves as the industry regulator, underscoring its influence in steering the direction of the national O&G industry.

In the face of the prevailing operating environment and energy transition, Malaysian OGSE players must transform and adapt to the changing needs and expectations of the market to strengthen their competitiveness. A failure to embrace change will pose significant risks to the long-term sustainability of the Malaysian OGSE industry.

It is in this context that this National OGSE Industry Blueprint 2021-2030 was developed with a view of steering Malaysian OGSE companies towards: (i) building greater competitiveness to expand into new markets abroad; and (ii) exploring opportunities to move to relevant adjacent industries that may require similar expertise and standards of work, such as in the renewable energy sector. This will indirectly ensure the revenue generated and employment provided by local OGSE companies are maintained or strengthened in the future.

O&G operators have, in recent years, stepped up their presence in renewable energy and this may translate into an increase in larger-scale projects. In some specific segments such as offshore wind facilities, where OGSE capabilities are transferrable, this presents an opportunity to capture a growing market comprising companies that are well-versed with their suppliers' track record and capabilities.

Adapting to this evolving landscape will allow the OGSE industry to be a part of the renewable energy sector and—in light of the growing environmental, social and corporate governance concerns—secure their social license to operate.

This Blueprint will also build on other documents which established a roadmap for the Malaysian OGSE industry, starting in 1987 through an initiative by the Malaysian Industrial Development Fund (MIDF) and other industry stakeholders to establish local participation in the industry that was then exclusively dominated by foreign companies. The initiative saw the development of a blueprint which recommended measures including carving out large contracts into smaller components, supporting local and Bumiputera companies and developing start-ups and small vendors.

With lessons learnt in previous years and an aim to complement existing initiatives to develop the industry further and harness long-term value creation, this National OGSE Industry Blueprint 2021-2030 seeks to chart the course for a comprehensive programme that will support the transition of the Malaysian OGSE industry towards a sustainable future.

³ OGSE100 FY2019: Top 100 OGSE Companies in Malaysia

⁴ PETRONAS Activity Outlook (2019-2021)

⁵ OGSE100 FY2019: Top 100 OGSE Companies in Malaysia

⁶ Announcement by Government of Malaysia 2019, depleting from total reserves of 6.8 billion barrels of oil equivalent today

⁷ <https://www.petronas.com/sustainability/net-zero-carbon-emissions>

CASE FOR CHANGE

The Malaysian OGSE industry has benefited from government-led development through various policies, laws and programmes implemented since the 1970s, including the Petroleum Development Act 1974 and PETRONAS Vendor Development Programme.

Through this Government-led development, which introduced initiatives such as Bumiputera requirements for licensing and registration with PETRONAS, as well as an extensive list of funding and assistance for SMEs, Malaysia has successfully nurtured an inclusive OGSE industry and achieved a number of its industry participation goals.

However, the industry is facing constraints in achieving further value creation, which have been further exacerbated by the low oil price environment and the pressing need for the energy industry to transition to a more sustainable model that is less dependent on finite fossil fuels.

CASE FOR CHANGE

OGSE Segment Overview

Following the enactment of the Petroleum Development Act and targeted development programmes since the 1970s to build up Malaysia's OGSE capabilities, the OGSE sector today is well-established and equipped to cater to the requirements of the oil and gas supply chain.

1.1 Malaysia OGSE Industry Segment At a Glance

CATEGORY	OGSE SEGMENTS IN CATEGORY
Strong segments <ul style="list-style-type: none"> In this segment, Malaysian players' competitive advantage are in capability and cost, but in the low-complexity end of the OGSE capability scale Support needed to transition to higher-value offerings, boost global positioning 	<ul style="list-style-type: none"> Drilling rigs – tender assisted Aviation Floating offshore facilities – FPSO/FSO Offshore installation – heavy lift Offshore installation – pipe lay Well services – low complexity Well services – stand alone Engineering, design and consultancy
Emerging segments <ul style="list-style-type: none"> Room for improvements in competitiveness, solidifying local presence and scaling up 	<ul style="list-style-type: none"> Pipeline maintenance and services Hook-up and commissioning (HUC) & Topside major maintenance (TMM) Marine vessels Offshore fabrication Civil and structural works Mechanical rotating services Well services – auxiliary Decommissioning TA and mechanical static Drilling rigs – jack-up Drilling equipment and accessories – surface wellhead and Christmas tree Drilling equipment and accessories – subsea wellhead and coiled tubing Rotating equipment Instrumentation services
Nascent segments <ul style="list-style-type: none"> Large gaps to meet as local capability is insufficient Dependent on international expertise to operate competitively Support needed to build up key capabilities 	<ul style="list-style-type: none"> Drilling equipment and accessories – OCTG Drilling rigs – semi-submersible Integrated onshore construction Seismic data acquisition Well services – core

Against some of the other countries with a sizeable OGSE presence such as Norway and the UK, Malaysia's OGSE industry fared well, albeit with areas for improvement to future-proof businesses and skillsets and weather challenges in the future.

MALAYSIA OGSE VS NORWAY AND THE UK

NORWAY



MALAYSIA



UNITED KINGDOM



NUMBER OF FIRMS

About
1200
companies in Norway as of 2017

In contrast, Malaysia's OGSE sector is more fragmented, than both Norway and the UK, and is home to over
2,700 active*
companies as of 2018

About
1,216
companies in the UK as of 2018

4000
companies

REVENUE GENERATED (IN USD)

~USD35.7Bln.
Norwegian OGSE companies provide wide-range of services, as well as technologically advanced, specialised solutions

~USD16.4Bln
Works done by Malaysian OGSE companies tend to be on the less complex end of the O&G value chain

~USD35 Bln
UK's OGSE sector is quite similar to Norway

% OF TOTAL REVENUE FROM EXPORTS

52%
Norway's exports of OGSE products and services make up 52% of total revenue

In contrast, exports made up
32%
of total revenue

N/A

NUMBER OF PEOPLE EMPLOYED IN OGSE

100,000

59,000

N/A

NUMBER OF OGSE-RELATED PATENTS FILED IN LAST 5 YEARS

960 patents
filed by local inventors

36 patents
Malaysia's OGSE technology development volume is low in comparison to Norway, an indicator that R&D activity is on the low-end vis-à-vis industry size

381 patents
in digital oilfield tech
UK's OGSE sector is long known for its operational excellence, strong R&D activities

NUMBER OF OGSE PATENTS CITED OR REFERENCED BY LOCAL INVENTORS

772
forward citations

25
forward citations
The quality of local OGSE technologies is not widely regarded in the field
Innovation outputs for Malaysia and Indonesia have comparably similar impacts at about 0.7 citations per patent for both countries

N/A

LIKELIHOOD OF CASH-FLOW STRAIN, BASED ON PUBLIC-LISTED OGSE COMPANIES

1.6

0.8
Malaysian OGSE companies are in greater financial distress in comparison to Norway
(an Altman-Z score of less than <1.1 indicates firms are already in distress)

N/A

* This figure refers to non-dormant OGSE companies on SSM

The Norway-UK comparison underscores the need for change in Malaysia's OGSE industry. Even as investments in the sector have risen amid domestic confidence in the industry's value proposition, these are some of the critical levers to be addressed in order to boost and position the sector for future growth.

1.2 Levers for Change

Improving the state of Malaysia's OGSE industry vis-à-vis will require building and enhancing the sector's existing capabilities. Any recommendations and solutions must take into consideration the nuanced differences within the sector in terms of segment, size and asset-heaviness. As such, the Blueprint has identified the following levers to ensure the industry is developed in a holistic manner.



INDUSTRY WIDE

Industry wide, large OGSE players trail benchmark EBITDA⁸ margins, when compared in terms of revenue. In addition, asset-light OGSE players in Malaysia, on average, are over-indebted when compared according to size of assets. Multiple segments have significant gaps to global benchmarks, both from technical and commercial standpoints. Finally, there remains a low take-up of available existing initiatives provided by multiple organisations, particularly initiatives which are not sector-specific.



TECHNOLOGY DEVELOPMENT

In terms of technology development, business uncertainty has impeded long term investment into R&D. Risk aversion and cash crunch have introduced financing constraints in technology and R&D. Furthermore, there is still limited awareness and conviction over the importance of R&D for the industry.



TALENT DEVELOPMENT

In terms of talent development, there exists a supply gap in high expertise functions, as Malaysian companies tend to focus on sub-segments of the industry which require lower technical requirements. More recently, the perception of OGSE as an attractive industry to work in has been waning. In addition, local OGSE talents are not readily equipped for the future, especially in light of the transition into adjacent sectors or industries and new energy.



EXPORT CAPABILITIES

In terms of export capabilities, the sub-scale nature of certain segments limits export competitiveness of the industry. Concerns over personnel security and judicial complexity in emerging markets have also been highlighted, particularly by industry players. In addition, there is limited appetite to commit to upfront export investments. Finally, trade barriers additionally hamper Malaysian exports against global peers.



FINANCIAL STRENGTH

In terms of financial strength, informational gaps in the industry have been constraining access to funding. This includes debt and equity financing, as well as funding from incentive schemes. Finally, there is limited availability of funding for emerging adjacent ventures into areas such as new energy.



BUMIPUTERA PARTICIPATION

In terms of Bumiputera participation, stakeholders have identified overlaps and insufficient coordination across initiatives. Specific to Bumiputera support, there is also a low take-up by OGSE companies, especially for cross-sector assistances. In addition, there is a growing, but limited operator and anchor contractor involvement in vendor development. Finally, it has been mentioned by several stakeholders that the existing Bumiputera requirements are not fostering true capability development within OGSE.

⁸ Earnings before interest, tax, depreciation and amortisation

NATIONAL OGSE INDUSTRY BLUEPRINT 2021-2030:

ARTICULATING THE VISION

Building on previous efforts to nurture participation in the country's OGSE industry, this Blueprint is targeted at promoting the industry to greater heights by focusing on results in core economic indicators.

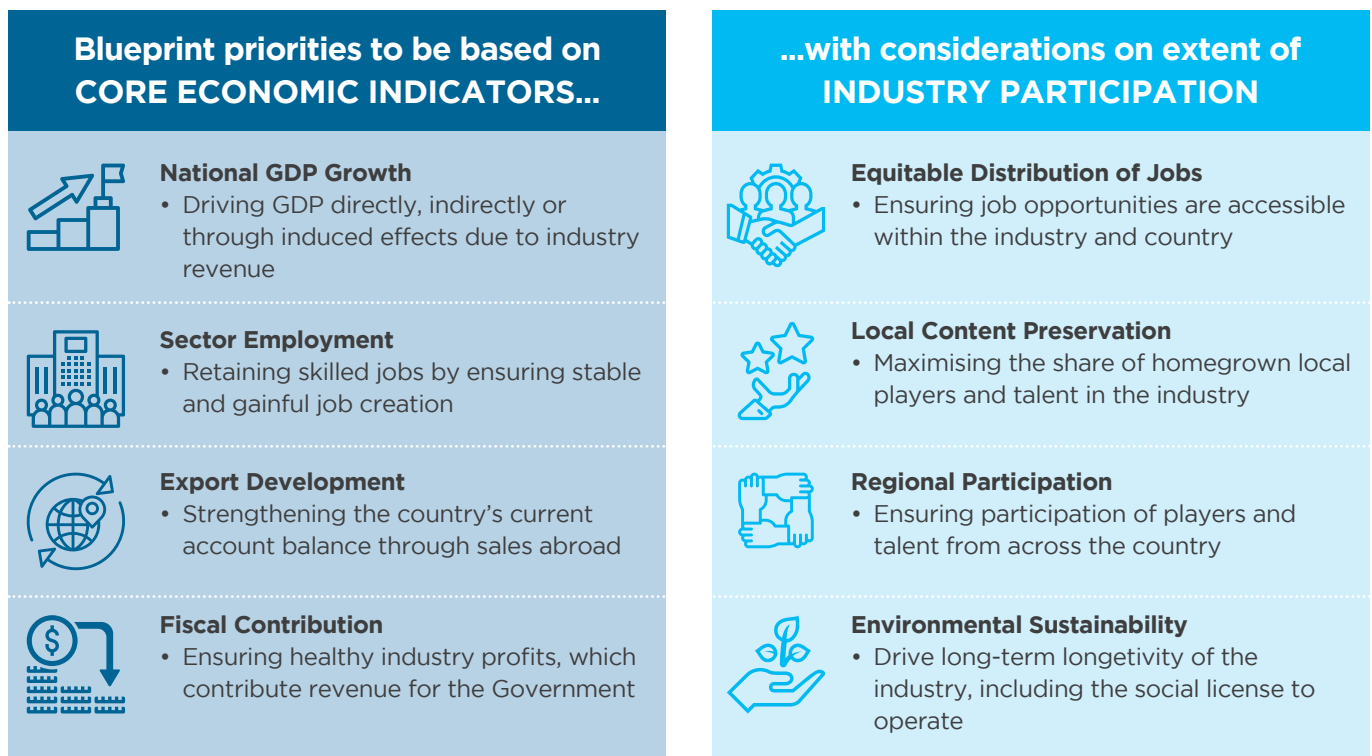
This will require gradually relaxing, where appropriate, some earlier support measures instituted to nurture industry participation, enabling targeted expansion of capable firms in specific segments within export markets to take advantage of scale beyond Malaysia. This would also mean raising the profitability, resilience and competitiveness of Malaysian OGSE companies closer to global benchmark levels.

NATIONAL OGSE INDUSTRY BLUEPRINT 2021-2030: ARTICULATING THE VISION

Further to this, the industry will require a balanced approach between core and additional goals leading up to 2030. This means keeping protection where needed and for as long as needed, but introducing liberalisation where feasible.

The Blueprint also ensures the continued development of the OGSE industry is aligned with national priorities, including achieving an equitable distribution of jobs, preserving local as well as regional content, and ensuring environmental sustainability, as articulated in the Shared Prosperity Vision 2030, the 12th Malaysia Plan 2021-2025, and National Energy Policy (NEP), among others. This will allow for the harnessing of aggregate economic benefits overall.

The figure below illustrates the core objectives which build the vision for the OGSE industry and the industry participation needed to achieve the vision.



NATIONAL OGSE INDUSTRY BLUEPRINT 2021-2030: ARTICULATING THE VISION

Against this backdrop, the vision of the Blueprint is to develop a **robust, resilient, and globally-competitive** Malaysian OGSE sector which contributes to the **sustainable development of national priorities**.

Based on this vision, the Blueprint has identified four strategic pillars to spur the industry in an effective and inclusive manner:

Competitiveness

Competitiveness through improved cost and quality to increase sector contribution to national GDP. A competitive sector is characterised by the utilisation of technology and human capital improvements to deliver superior quality and margins. This includes cost competitive processes and an integrated supply chain which allow customers to be served cheaper and faster. This would increase competitiveness against foreign vendors both locally and beyond Malaysia. Concurrently, foreign investors would gravitate towards Malaysia as an international hub for OGSE, as the market demonstrates its capability of delivering superior returns.

Resilience

Resilience through a heightened ability to prepare for and adapt to change, where players can withstand oil price volatility and macroeconomic uncertainty. The industry would also be enabled to spread exposure across multiple, less-correlated segments and relevant adjacent sectors and industries to cushion market and economic fluctuations. OGSE players should also reduce their dependence on PETRONAS and/or other Malaysian customers by expanding and diversifying their customer base.

Development

Development with national and local interests in mind. This involves meeting national targets for community development such as Bumiputera participation. Beyond community development, meaningful SME participation should be pursued to ensure gainful job creation. In addition, the industry should look towards opportunity-creation in key regions such as Sabah and Sarawak.

Sustainability

Sustainability by maintaining the sector's social 'license to operate'. Achieving this involves formulating regulation in adherence to global standards on labour, funding, and procurement practices. This also includes adopting strategies to promote sustainable business operations in line with evolving environmental standards and promoting robust corporate governance and social responsibility frameworks tailored to OGSE.

NATIONAL OGSE INDUSTRY BLUEPRINT 2021-2030:
ARTICULATING THE VISION**A VIEW INTO THE FUTURE: A THRIVING AND COMPETITIVE OGSE INDUSTRY IN 2030**

With the robust implementation of initiatives under the four strategic thrusts, OGSE industry's GDP contribution to the national economy will grow to **around RM40 billion – RM50 billion from current levels of around RM20 billion – RM 40 billion.**

Profit before tax for the industry will see close to a two-fold increase and exports are targeted to account for a **greater proportion (50%) of the industry's total revenue.** It is also envisioned that the industry in **2030 will consist of 60,000 skilled and semi-skilled talents.**

In the coming decade, Malaysia's OGSE sector will undergo significant changes to boost competitiveness, financial resilience and innovation. At the same time, the Blueprint will also work towards ensuring such growth is achieved in a sustainable manner, without greater costs to future generations, through better sustainability practices as well as a drive to produce low-carbon technologies in the field. Efforts under these will see more OGSE companies, **around 70, adopting and reporting their sustainability practices and at least 5 companies to be incorporated in any reputable sustainability indices.**

The approach to ensure a thriving local OGSE industry with high technology development and innovation activities will also see **a threefold increase in OGSE patents filed by local inventors to 100 patents and the proportion of local principal companies should rise to 80% from the current 70%.**

Recent oil price crises due to a destruction in demand as the COVID-19 pandemic grounded air travel and governments imposed lockdowns demonstrate a critical need for OGSE companies to build financial resilience. One of the means include diversifying into other sectors and ensuring companies **derive at least 25% of revenues outside oil and gas by 2030.**

A focus on development of the industry will also **double the number of VDP graduates to 60, while at least 2% of companies in Malaysia's OGSE industry will be listed on Malaysia's stock exchange by 2030.**

RM40 billion – RM50 billion GDP CONTRIBUTION

50% INDUSTRY'S TOTAL REVENUE

60,000 SKILLED AND SEMI-SKILLED TALENTS IN 2030

70 COMPANIES ADOPTING AND REPORTING THEIR SUSTAINABILITY PRACTICES

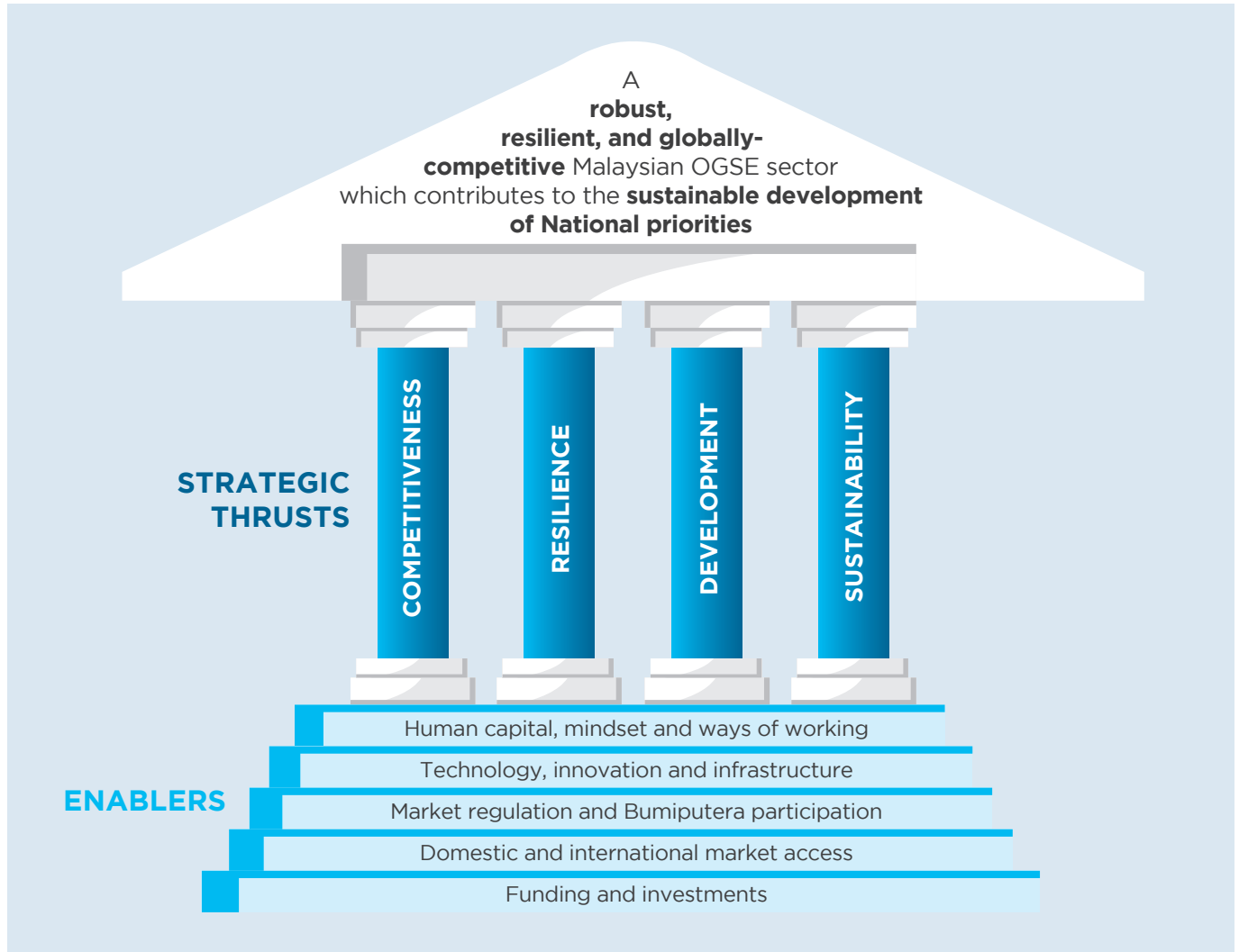
5 COMPANIES TO BE INCORPORATED IN REPUTABLE SUSTAINABILITY INDICES

3x INCREASE IN OGSE PATENTS

25% REVENUES OUTSIDE OIL AND GAS BY 2030

2% COMPANIES WILL BE LISTED ON MALAYSIA'S STOCK EXCHANGE BY 2030

NATIONAL OGSE INDUSTRY BLUEPRINT 2021-2030: ARTICULATING THE VISION



The figure above illustrates the relationship between the vision statement, the four pillars, and their enablers. The vision statement is supported by four strategic pillars, which are then enabled by the enabler domains that are extensively covered in this Blueprint.

The Blueprint has identified 31 recommendations to drive improvements in the OGSE industry and address specific gaps which exist in the Malaysian market.

NATIONAL OGSE INDUSTRY BLUEPRINT 2021-2030: ARTICULATING THE VISION

These initiatives encompass sector-wide recommendations on structural challenges the industry faces, segment-specific recommendations to address challenges unique to Malaysian OGSE segments, as well as recommendations specific to the size/type of players e.g. large OGSE players vs SMEs:

INITIATIVES	INITIATIVE OWNERS	IMPLEMENTATION PARTNERS
A. Industry-wide recommendations: 1. Government point of contact for OGSE 2. Industry consolidation 3. OGSE industry data depository 4. Industry-wide guidance on global OGSE trends and best practices 5. OGSE Company recognition	MPRC	MIDA, MATRADE, MIMOS, TERAJU MINISTRY OF FINANCE DOSM, PETRONAS, industry associations DOSM, PETRONAS, MIDA, MATRADE, MIMOS, TERAJU PETRONAS, EPU, MOF
B. Technology development recommendations: 1. Applied R&D centres to bridge academia and industry 2. R&D apprenticeship programme 3. Secondment of local talent to foreign R&D centres 4. Tech adoption financing, tax deductions, and tariff waivers 5. Overseas researcher outreach programme 6. In-shoring of R&D activities and high-value manufacturing from MNCs 7. OGSE Intellectual Property (IP) marketplace	MPRC MOGSC MPRC MIDA TalentCorp MIDA MPRC	MIMOS, PETRONAS, Universities, industry associations MPRC, MOHE, Universities, industry associations MOSTI, MOGSC, MOHE, Universities MPRC, MIMOS, MTDC, MOF/LHDN MPRC, MOHR, MOGSC, PETRONAS, Immigration MPRC, MIMOS, Universities MIMOS, MTDC, PETRONAS, Universities
C. Talent development recommendations: 1. Skilled worker retention programme 2. OGSE career promotion 3. Expansion of Engineering courses 4. Expert mentorship from ex-OGSE talents	MPRC MOHE TalentCorp	MIDA, MOF, MOHR, HRDF, TalentCorp, industry associations industry associations, MOE, MOHE, MOHR, HRDF, TalentCorp Universities, industry associations, MIDA, TalentCorp MPRC, MOHR, industry associations

NATIONAL OGSE INDUSTRY BLUEPRINT 2021-2030: ARTICULATING THE VISION

INITIATIVES	INITIATIVE OWNERS	IMPLEMENTATION PARTNERS
D. Export capabilities recommendations: <ol style="list-style-type: none"> Orchestration of consortiums for OGSE players, with the facilitation of seed financing Grants and/or tax breaks to OGSE segments that are nearly export-ready Mitigation of export risk through debt collection, export risk insurance and arbitration Engagements with foreign government / National Oil Corporations in high-potential markets Energy Export Fund 	MATRADE	MPRC, MIDA, EXIM Bank MPRC, MIDA, BNM, MOF MPRC MPRC, MOFA MPRC
E. Financial strength recommendations: <ol style="list-style-type: none"> OGSE financing Centre of Excellence Financial management workshops Alternative financing platform for OGSE Special growth facility for nascent adjacencies 	MPRC MOGSC MPRC MPRC	BNM, MTDC, MIDA, Financial Institutions MPRC, industry associations, SME Corp MTDC, SmeCorp, MIDA, SC, Ekuinas, PE Firms BNM, KeTSA, MPRC, Financial Institutions, industry associations
F. Bumiputera participation recommendations: <ol style="list-style-type: none"> Centralisation of OGSE Bumiputera assistance 	TERAJU	MPRC, MEDAC, SMECorp, MATRADE

* MPRC will be supporting all of these initiatives

These following five initiatives currently in implementation by various ministries, government agencies and industry players are the additional initiatives aimed at bringing about improvements to the OGSE sector:

- Review of PETRONAS' Standardised Work and Equipment Categories (SWEC)
- Enhance capability and competitiveness for sustainable growth
- Catalyst programme to develop homegrown champion through targeted cross-enabler support
- Vendor Development via PETRONAS' Vendor Development Programmes (VDPs), Petroleum Arrangement Contractors (PACs) -coordinated by MEDAC
- Bumiputera programmes e.g. Program Lestari in the past was introduced to strengthen ecosystem and nurture entrepreneurial capabilities.

Taking into consideration the existing initiatives carried out, as well as the recommendations of the Blueprint, 10 flagship initiatives which will commence in 2021, have been earmarked and are aimed at pivoting the industry's focus from survival to a growth-driven mindset. The 10 flagship initiatives are as follows::

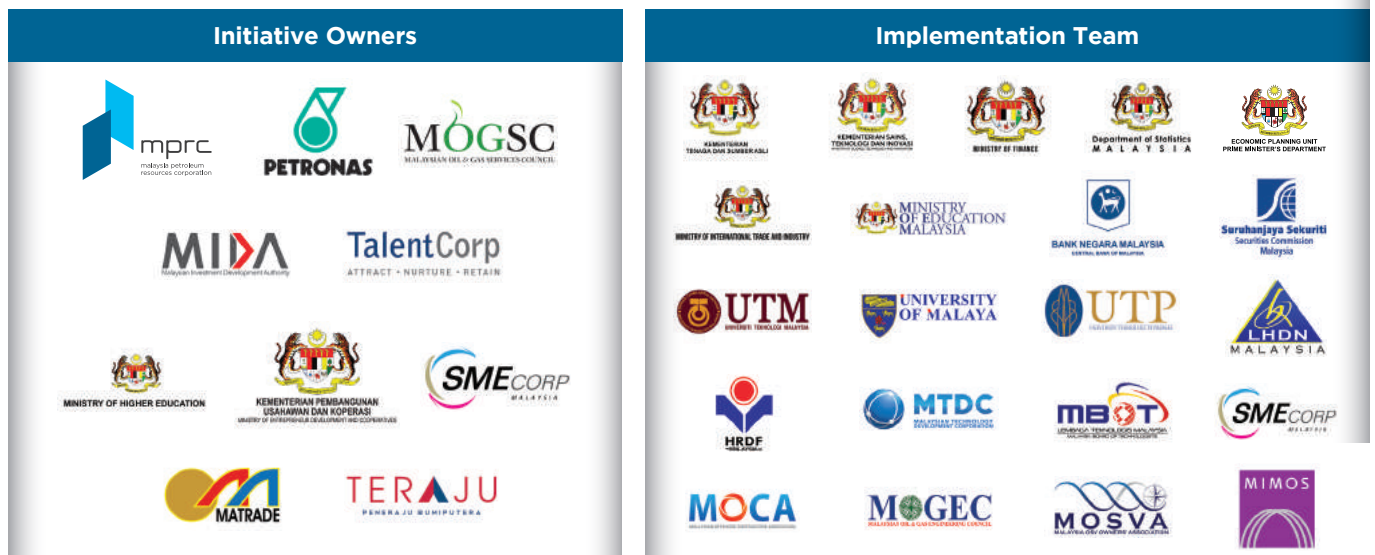
- Government point of contact for OGSE
- Industry consolidation
- OGSE company recognition
- Applied R&D Centre
- Tech adoption financing, tax deductions & tariff waivers
- Overseas researcher outreach programme
- Consortiums for OGSE players with facilitation of seed financing
- Grants/tax breaks to OGSE segments which are nearly export-ready
- Mitigation of export risk through debt collection, export risk insurance and arbitration
- Energy Export Fund

GOVERNANCE

The vision for OGSE as articulated in this Blueprint will be implemented by a cross Government-industry team, with initiative owner and implementation teams deriving from major stakeholders in the Government and industry.

GOVERNANCE

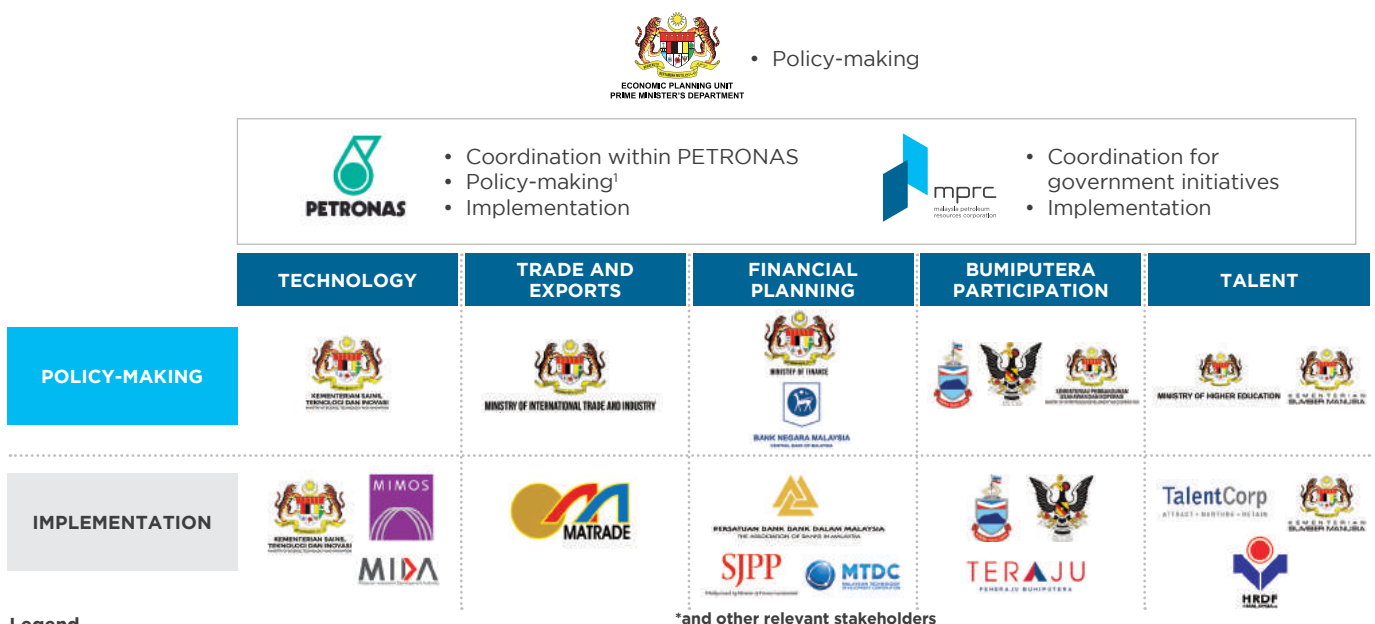
Cross government-industry team to realise the vision for OGSE



Not exhaustive

PETRONAS and MPRC will assume multiple roles in the implementation governance model. PETRONAS will coordinate initiatives within PETRONAS, make policies for the OGSE industry through Malaysia Petroleum Management (MPM)⁹ as well as implement initiatives and policies. MPRC will coordinate OGSE-specific government initiatives and implement selected ones. Both PETRONAS and MPRC will be supported by policy makers and implementation partners in their respective initiative verticals (see figure below).

Multiple hats for PETRONAS and MPRC alongside other policy-makers, owners and implementation partners



*and other relevant stakeholders

Legend

Focus of blueprint

¹ Malaysian Petroleum Management (MPM); Note: list is not exhaustive

⁹ MPM acts for and on behalf of PETRONAS in the overall management of Malaysia's domestic petroleum resources throughout the lifecycle of upstream oil and gas assets

GOVERNANCE

Guiding principles for implementation governance

The Blueprint has identified the following guiding principles for implementation governance:

1. Initiative owners to maintain accountability over implementation of blueprint initiatives
2. Governance model to span entire initiative implementation duration or five years, whichever is shorter
3. Decision-making body governing initiative owners to be at a higher level of authority than the respective initiative owners
4. Secretariat of the governing body to be independent from the initiative owners
5. Governance models to be streamlined wherever appropriate

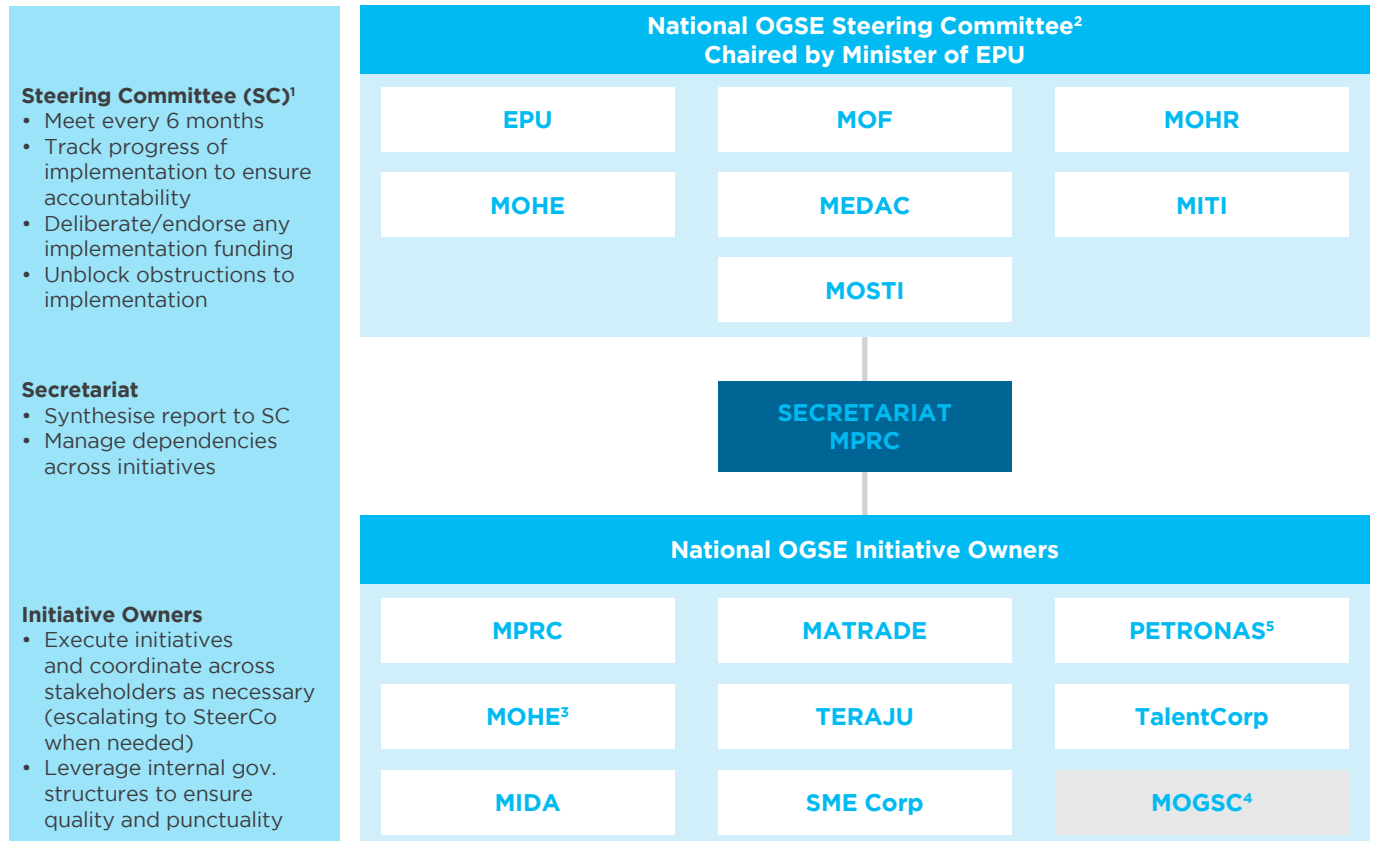
The following figure spells out more details and examples on the implementation governance guiding principles:



GOVERNANCE

Governance structure for blueprint initiatives

The following governance structure for Blueprint initiatives (see figure below) will ensure accountability and provide execution certainty by providing a platform for unblocking any potential intra-agency and inter-agency issues:



¹ Initiative owners to only be called for SC meeting as and when needed to present on relevant sub-initiatives. Initiative owners who are also SC members will be excluded from deliberations on initiatives which are owned by the respective owners;

² Proposed committee members would be the KSUs from MOF, EPU, MEDAC, MITI, MOHE and MOHR. The committee chair may also invite the President and Chief Executive Officer of PETRONAS and the Chief Statistician of DOSM;

³ MOHE is to be represented by the appropriate agency;

⁴ MOGSC is an invited member in its position as an initiative owner, for as long as their owned initiative is underway;

⁵ Initiatives are referring to on-going in-flight initiatives already being implemented by PETRONAS; High-level reporting of status updates of PETRONAS in-flight initiatives at SC as and when required

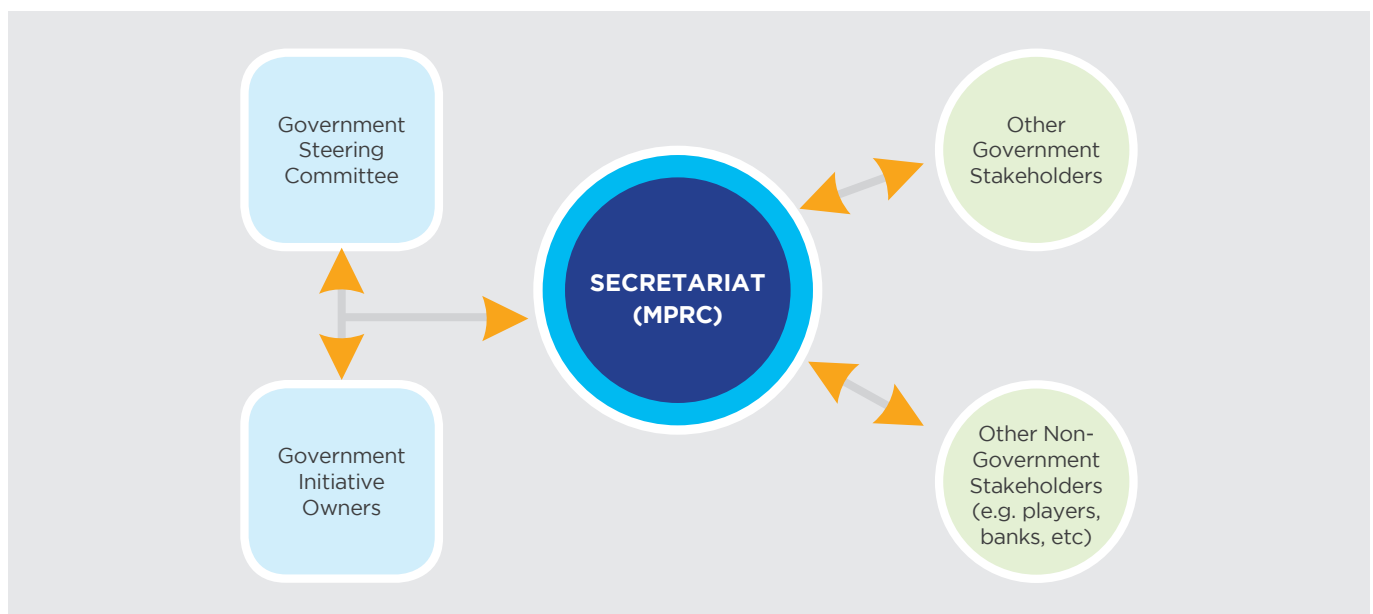
GOVERNANCE

A National OGSE Steering Committee is to be established with the responsibilities of:

- Tracking progress of implementation to ensure accountability
- Deliberating and recommending funding for implementation to the Government/Cabinet. Applications for funding are to be made through respective ministries based on the funding scope, and
- Unblocking obstructions to implementation

The Steering Committees is intended to meet every six months to conduct the responsibilities noted above. The National OGSE Steering Committee will consist of the KSUs from MOF, EPU, MEDAC, MITI, MOHE, MOHR and MOSTI. The chair of the Steering Committee may, when necessary, invite the President & Group CEO of PETRONAS and the Chief Statistician of DOSM.

MPRC will serve as the Secretariat, which will be responsible for synthesising reports to the Steering Committee and managing dependencies across initiatives, as well as serving as the conduit for communication between different stakeholders as illustrated in the figure below:



The remaining initiative governance structure will be completed by initiative owners consisting of Ministries and Government agencies. The initiative owners will primarily execute their owned initiatives and coordinate across stakeholders as necessary, including escalating to the Steering Committee when needed. The initiative owners will also leverage internal governance structures to ensure quality and punctuality of the delivery of the initiatives. Initiative owners are to only be called for Steering Committee meetings as and when needed to present on relevant sub-initiatives. Initiative owners which are also Steering Committee members will be excluded from deliberations on initiatives which are owned by the respective owners. For PETRONAS in-flight initiatives, reporting will only be on high-level status updates.

Beyond initiative owners, other implementation partners (e.g., MIMOS) within the initiatives will have important roles to play in supporting the implementation of initiatives. The onus will be on the respective initiative owners to engage and consult their respective implementation partners as well as to consolidate and report their progress against the initiative-level tracking and reporting to the Secretariat.

The 10 flagship initiatives will be monitored, reported and reviewed at every National OGSE Steering Committee meeting while the reporting of the other 21 initiatives to the National OGSE Steering Committee will be on an as and when necessary basis.

FLAGSHIP INITIATIVES

In developing this Blueprint, 31 recommendations were identified to drive improvements in the OGSE industry and address specific gaps which exist in the Malaysian market.

10 flagship initiatives were then carved out from the recommendations, as follows:

1. **Government point of contact for OGSE**
2. **Industry consolidation**
3. **OGSE company recognition**
4. **Applied R&D Centre**
5. **Tech adoption financing, tax deductions & tariff waivers**
6. **Overseas researcher outreach programme**
7. **Consortiums for OGSE players with facilitation of seed financing**
8. **Grants/tax breaks to OGSE segments which are nearly export-ready**
9. **Mitigation of export risk through debt collection, export risk insurance and arbitration**
10. **Energy Export Fund**

Flagship Initiative 1:

GOVERNMENT POINT OF CONTACT FOR OGSE

CASE FOR CHANGE

The Government provides many services and support mechanisms relevant to OGSE companies across many Ministries and Government agencies. However, currently there is no centralised place or agency for the OGSE industry to easily obtain a view of all available support and services, including industry-development initiatives which industry players may benefit from. As a result, OGSE players must search for and access services or support mechanisms across individual agencies and providers. This may lead to incomplete information, which further hampers the take-up of existing industry-development initiatives.

OBJECTIVES

This initiative aims to provide a single point of coordination in the Government for the OGSE industry to reach out to all Government support and services. The centralised agency could further facilitate companies through the application process to encourage effective take-up of industry initiatives. Nonetheless, this initiative would not prevent any industry player, regulator (PETRONAS), Government Ministry/agency or other stakeholder from reaching out directly to the Government on OGSE-related matters.

IMPLEMENTATION APPROACH

MPRC will drive this initiative, serving as the coordinator in standardising interaction with all Ministries and Government agencies that provide OGSE related services. The implementation team will consist of all relevant Government agencies and Ministries that provide OGSE related services (e.g. MIDA, MATRADE, MIMOS, TERAJU), financial institutions and investors.

The approach for implementing this initiative is as follows:

- MPRC to be the coordinating agency/platform and Government point of contact for all OGSE-related matters (especially for interdependencies between initiatives).
 - Directing OGSE companies to the respective provider (e.g. to PETRONAS for licensing and registration, to MATRADE for Energy Export Fund).
 - Provide/disseminate market information and outlook on OGSE industry.
 - Share best practices to OGSE companies (i.e. success factors in Bumiputera assistance application).
- MPRC to designate liaisons for relevant Government agencies/Ministries to ensure effective coordination and provision of services and support to OGSE companies.

IMPACT & KEY PERFORMANCE INDICATORS

The initiative is expected to impact the industry in three ways. Firstly, it would establish a dedicated information provider on all OGSE-related support, services and initiatives. Secondly, the single point of contact would simplify industry-Government engagement. Thirdly, it would increase the utilisation of available Government services and support. As such, the KPIs for this initiative consist of:

1. Number of uptakes of Government services and support among OGSE companies.
2. Satisfaction of Government services and support among OGSE companies.



CASE STUDY

The UK and Norway provide meaningful examples across the O&G industry in adopting best practices throughout various segments of the value chain which can be emulated here in the implementation of this flagship initiative.

In the UK, the Oil and Gas Authority (UKOGA) is the authority responsible for regulating, shaping and promoting the industry. It is tasked with regulating exploration and development of oil and gas in the UK, encouraging greater collaboration and better commercial behaviours among industry players as well as promoting investments in the industry. Their role includes conferring licenses, administering an industry repository, publishing market intelligence and consulting stakeholders for policymaking, among others.

In Norway, the Norwegian Petroleum Directorate (NPD) is the governmental specialist directorate and administrative body for the oil & gas industry. The NPD administers petroleum data and maps available resources for the aid programme provided by the Norwegian Agency for Development Cooperation. In advising the Ministry of Petroleum and Energy, setting frameworks and stipulating regulations, managing and organising data for the Norwegian continental shelf, conducting metering audits and collecting fees from the petroleum industry, among others, the NPD offers a comprehensive service to the industry under one roof.

Flagship Initiative 2: INDUSTRY CONSOLIDATION

CASE FOR CHANGE

Fragmentation of the Malaysia OGSE industry has resulted in some companies lacking the scale or diversity of offerings required to remain both locally and globally competitive. Therefore, industry consolidation is expected to enable small players to take on larger and more integrated contracts, while asset-heavy players can increase asset-utilisation and low margin players can reduce long-term costs through operational synergies.

OBJECTIVES

The main objective of this initiative is to strengthen and improve the competitiveness of the Malaysian OGSE industry in overcrowded segments.

IMPLEMENTATION APPROACH

MPRC will drive this initiative, coordinating and facilitating communication between interested parties and relevant agencies as well as Ministries which provide merger and acquisition (M&A)-related support.

The initiative will be implemented according to the following approach:

- MPRC to act as the facilitator for industry consolidation by:
 - Promoting high-potential consolidating companies in engaging with the Ministry of Finance for customised incentives for consolidation (e.g., tax holidays, stamp duty relief, export grants, other relevant support).
 - Supporting the business case for viable consolidation of companies, where the exercise benefits the OGSE industry and Malaysia as a whole.

IMPACT & KEY PERFORMANCE INDICATORS

This initiative is targeted to improve scale and overall competitiveness within the Malaysian OGSE industry. Its KPIs are as follows:

1. Optimal number of successful consolidations in OGSE.
2. Industry concentration (e.g. Herfindahl-Hirschman Index).



CASE STUDY

Consolidation is occasionally a necessary exercise to enhance competitiveness and efficiency and is undertaken globally across industries. Consolidation exercises are also not foreign to Malaysia, which followed in the footsteps of the global banking sector consolidation during the economic recession in the late 1990s. In 2000, Bank Negara Malaysia (BNM) proposed a major restructuring plan for its 71 small domestic financial institutions to be consolidated into six large banks. This exercise was due to the high fragmentation in the banking sector with many banks repeatedly recording severe non-performing loans, partly rooted in inefficiency. As a result of the restructuring, 35 financial institutions along with 11 of their subsidiaries were acquired and merged into 10 anchor banks. By 2006, the Malaysian banking industry had consolidated into 10 major local banks with ~RM100 billion in domestic banking assets, including four banks with assets of more than RM10 billion. From this exercise, it was observed that some of the anchor banks such as Maybank and Hong Leong Bank had significantly improved their cost efficiency.

On the global front, many countries offer various incentives to simplify the M&A process in an effort to increase scale and competitiveness of the local economy. Switzerland's Merger Act 2004 was a reform that significantly simplified the M&A process by removing provisions that triggered unfavourable tax consequences. In Taiwan, the M&A Act 2002 simplified the M&A process, introduced more types of mergers, as well as provided tax incentives to neutralise the transaction costs associated with M&A deals. Germany's Takeover Act 2002 introduced formal provisions governing the acquisition of publicly traded companies. Prior to the passage of the Act, takeovers of public companies were often not considered an option worth pursuing. Singapore's M&A Scheme 2010 was initiated to support the progressive restructuring of the economy towards higher-value, more competitive players, ensure a continuous flow of start-ups and new entrants, and to encourage the most competitive players to grow and scale up including through M&A.

Flagship Initiative 3: OGSE COMPANY RECOGNITION

CASE FOR CHANGE

OGSE companies without a PETRONAS license/registration, currently face challenges in accessing OGSE-specific support from providers (e.g. Ministry/agency/financial institutions). Verification typically requires extensive checks from the provider (e.g., checks on oil & gas contracts, participation in existing development programmes, order books).

As a result, these companies, which include purely international Malaysian players and downstream players who may not be registered with PETRONAS, may be overlooked from the provision of available support and contributes to under-utilisation of Government support and services.

OBJECTIVES

The main objectives of this initiative are:

- to facilitate providers in identifying legitimate OGSE companies which have yet to obtain a PETRONAS license and/or registration; and
- to enable more accurate data collection and reporting of the OGSE industry in Government reports.

IMPLEMENTATION APPROACH

MPRC will drive this initiative, acting as the coordinator in disseminating the recognised OGSE company list to relevant Government agencies and providers.

The initiative will be implemented as follows:

- A committee is to be established to detail the definition of OGSE companies in Malaysia.
- MPRC to provide recognition to companies that meet the OGSE Company definition requirements, but do not have PETRONAS license/registration. It is important to note here that OGSE status is not a substitute for PETRONAS license or registration, which is legally required for an OGSE company to serve oil & gas operators in Malaysia. Instead, it is a ticket to access targeted non-PETRONAS OGSE initiatives only.

IMPACT & KEY PERFORMANCE INDICATORS

This initiative aims to ease access to available support and services for OGSE companies.

The KPI for this initiative is as follows:

1. The adoption rate of OGSE company recognition amongst Malaysian OGSE companies which have yet to obtain PETRONAS license/registration.



CASE STUDY

This initiative draws parallels from Malaysia Digital Economy Corporation's (MDEC) establishment of MSC status in 1996 to accelerate the growth of the nation's digital economy. MSC Malaysia status provides eligible ICT-related businesses, both local and foreign, access to a wide range of targeted incentives, rights and privileges. MDEC clearly defined the eligibility criteria to ensure that the MSC status comprehensively captures the relevant companies within the industry. As a result, MSC status allows for better visibility and accurate reporting of key industry statistics including the number of players in the industry, revenue generated and workforce, among others. As of 2020, there were more than 2,900 companies holding MSC status and benefitting from various support available to them.

In Norway, the oil and gas service and supply industry consists of more than 1,100 companies providing goods and services in all stages of the value chain. The NPD developed a classification of OGSE companies to only include companies that conduct direct petroleum-related activities such as offshore vessels, supply bases, drilling rigs, seismic, engineering, platform yards, processing equipment and shipyards/ ship design. Other indirect petroleum-induced activities such as finance, transport, IT services and legal services, among others, were not included as part of the service and supply industry. All support from partners such as Norwegian Energy Partners to the industry players is then provided based on NPD's categorisation.

Flagship Initiative 4: APPLIED R&D CENTRE

CASE FOR CHANGE

Malaysian companies currently lack the capacity and capabilities for research and development (R&D), hindering the local OGSE industry from achieving further value creation. The limited focus on R&D has partly been caused by misperceptions that university outputs are industry-ready, while universities have underestimated the need for industry applicability, resulting in comparatively theoretical outputs.

OBJECTIVES

This initiative aims to establish applied R&D centres which will cater to all companies in the OGSE industry. These centres are expected to benefit companies especially those which are just starting to pursue R&D to establish a technological edge.

The main objectives of the proposed recommendation are to:

- Translate theoretical academic outputs into practical innovations and technologies for the industry, through opportunities created by existing research.
- Translate industry aspirations into academic research.
- Serve as an external resource to conduct applied R&D.
- Increase demand for R&D.

IMPLEMENTATION APPROACH

MPRC will own this initiative, supported by an implementation team which includes MIMOS and local universities with OGSE research capabilities (e.g., UM, UTM, UTP). MPRC will also serve as the coordinator, identifying potential focus areas for applied R&D and obtain industry buy-in for these focus areas, as well as acquire facilities, equipment and talent needed to conduct applied R&D.

The implementation approach for this initiative is as follows:

- Applied R&D centres serve as a bridge by collating university outputs and industry pain points or aspirations, then finding R&D opportunities to link university outputs with industry research aspirations. The centre would communicate these opportunities with industry, obtain funding and support from industry, and lead the applied R&D effort to interpret university outputs and link them with industry pain points. Separately, the centre could also guide academia on high-potential research based on its understanding of industry research aspirations.

- Awareness of research opportunities with foreign R&D centres could also form the basis for industry research consortiums, involving multiple (potentially competing) companies and research institutes, which could help improve R&D intensity within the OGSE industry. Funding within such consortiums may be similar to current practices in Joint Industry Projects (JIP).
- An applied OGSE R&D centre could involve an ASEAN-wide collaboration with a nexus in Malaysia. To ensure commercialisation potential, the centres should be linked to the demand pipeline (e.g. PETRONAS, industry associations). The centres should also be driven by private-sector funding and have short output times to avoid funding and obsolescence problems.
- Technologies developed by the centre can be linked to and leverage on efforts in Malaysian technological focus areas, for which policies, roadmaps and action plans are being or have been developed. These areas may include advanced materials, nanotechnology, green technology and others.
- Beyond universities, these centres can link up with design houses for further innovation. These design houses improve on existing products by modifying existing designs to be more efficient, and then trademark these designs.
- The centre could also help Malaysian OGSE companies commercialise their technologies and R&D outputs, whether developed with the centre or independently. This can be done by developing commercialisation delivery frameworks for use across the industry, and/or by providing commercialisation advisory and market research services. Profits from commercialising these technologies and outputs, backed by proper business/partnership models, can be used to sustain the research collaboration and the R&D centre.

**FLAGSHIP INITIATIVE 4:
APPLIED R&D CENTRE****IMPACT & KEY PERFORMANCE INDICATORS**

This initiative is targeted to drive higher spend in R&D, enabling innovation within the Malaysian OGSE industry. It is also expected to increase strategic collaborations in R&D as well as drive further academic involvement in OGSE innovation.

The KPIs for this initiative are:

1. Number of Malaysian OGSE patents filed.
2. Aggregate and median R&D spend¹⁰.
3. Number of R&D collaborations with the centres or with academia.
4. Number of OGSE companies collaborating on R&D.

**CASE STUDY**

Applied R&D centres have proven to be powerful in elevating innovation and industry collaboration, such as in the Carnot Institute in France, the Inter-University Micro Electronics Centre in Belgium and the Industrial Technology Research Institute (ITRI) in Taiwan. Malaysia has also already established an applied R&D centre, the Malaysian Institute of Microelectronic Systems (MIMOS) set up in 1985 to conduct applied R&D for the electrical and electronics (E&E) industry.

The establishment of the Carnot Institute followed France's realisation that its globally acclaimed research base was not producing breakthrough innovations, that inter-sector collaboration in R&D was lacking, and that links between the research system and industry were weak. Belgium's Micro Electronics Centre stemmed from its need to operate 3-10 years ahead of industrial needs and to foster development of the local industrial base by promoting R&D collaboration and developing technological skills with business. Taiwan's ITRI was born from its desire to facilitate the development of the semiconductor industry, as universities were not considered a suitable environment for commercialising technologies.

¹⁰ Can be replaced with other percentiles

Flagship Initiative 5:

TECH ADOPTION FINANCING, TAX DEDUCTIONS & TARIFF WAIVERS

CASE FOR CHANGE

This initiative builds on Flagship Initiative 4: Applied R&D Centre, in recognising that the results from R&D are inherently uncertain with no guarantee of success. As such, countries which have encouraged R&D in specific areas have backed R&D activities by funding these efforts or purchasing the products resulting from such R&D outputs. Nevertheless, the Government cannot directly purchase OGSE products, although it can encourage demand among market players by providing tech adoption tax deductions and financing.

The uncertainty of R&D also implies that technological innovation is not necessarily limited to Malaysia, but can also arise in other countries. These innovations may be adjacent to or even consequential to OGSE technologies being developed in Malaysia. The acquisition of these technologies may be helpful or even necessary for local inventors seeking to further develop their own technologies.

OBJECTIVES

This initiative caters to companies actively developing new technologies and adopting local tech. The main objectives of this initiative are as follows:

- Encourage adoption of and strengthen demand for nascent local OGSE technologies.
- In-shore promising foreign OGSE technologies into Malaysia for local inventors to utilise and develop on.

IMPLEMENTATION APPROACH

MIDA is the owner for this initiative, supported by an implementation team which includes MPRC, MIMOS, MTDC, and MOF/LHDN. MPRC, being the coordinator, will engage stakeholders to agree on the terms, magnitude and process of granting deductions and financing as well as promote the lever to industry.

The implementation approach for this initiative is as follows:

- The technology adoption tax deductions would apply to purchases of nascent local technologies, or acquisitions of promising and relevant foreign technologies, where the purchase or acquisition costs would be tax-deductible. These deductions could also be scaled up to double or triple deductions to increase impact.
- Technology adoption financing is a loan offered to purchase nascent local technologies or acquire promising and relevant foreign technologies. These measures lower any financial barriers to purchase these technologies, thereby supporting their demand.

Such deductions and financings should also be paired with and leverage existing R&D initiatives for greater impact.

IMPACT & KEY PERFORMANCE INDICATORS

This initiative is expected to impact the industry in two ways. First, demand and revenues for nascent local OGSE technologies are expected to increase, with potentially positive impacts on innovation. Second, R&D spend is expected to be higher, with potentially more innovation activity.

Based on these impacts, the KPIs for this initiative are:

1. Number of OGSE patents filed, sold or licensed by Malaysian researchers.
2. Aggregate and median R&D spend (or R&D spend by another percentile).
3. Number of supply-side SMEs/companies benefitting from this initiative.
4. Number of demand-side SMEs/companies benefitting from this initiative.



CASE STUDY

Governments all over the world have adopted similar initiatives to drive innovation and encourage technology adoption among market players. In China, an application-based import quota regime was introduced in 2016 to offer import tax waivers for nearly 400 pieces of equipment used in oil and gas exploration, in order to boost domestic energy output.

Import tariffs on 54 high tech goods have been removed in Canada, with the Government undertaking to phase out all customs duties on another 49 items over the next three years for the benefit of Canadian importers. Up until 2019, South Korea offered 100% exemption from individual or corporate income tax for the first five years and a 50% reduction in such taxes for the following two years for foreign-invested companies that engaged in certain qualified high-tech businesses.

Flagship Initiative 6:

OVERSEAS RESEARCHER OUTREACH PROGRAMME

CASE FOR CHANGE

While the Malaysian OGSE industry has become well-established over the years, R&D talent in the local OGSE talent landscape is scarce, requiring industry players to spend more time to find the right R&D talent, causing delays to the R&D process.

OBJECTIVES

The main objective of this initiative is to enable industry players to efficiently and effectively find the R&D and highly skilled talent (foreign nationals or foreign-based Malaysians) that they need in the event local talent is unable to meet the requirements. It is also expected to elevate the overall capability of local OGSE players and talent pool.

IMPLEMENTATION APPROACH

TalentCorp will own this initiative, supported by an implementation team which includes MOHR, Immigration Dept, MPRC, MOGSC, PETRONAS and Malaysian embassies in other countries. Additionally, TalentCorp is expected to facilitate discussions between Government agencies and industry groups/players to determine the services needed.

This initiative will also synergise with existing efforts to attract talent to Malaysia, such as TalentCorp's Returning Expert Programme (REP), TalentCorp's Residence Pass-Talent (RP-T), Employment Pass (EP) and MPRC's MyOGCaRe programme.

The implementation approach for this initiative is as follows:

- Facilitate OGSE industry in identifying highly skilled overseas researchers by utilising existing talent programme for foreign nationals and foreign-based Malaysian talent.
- The Government will work closely with industry to promote Malaysia as a dynamic talent hub by organising a series of programmes and activities to attract high skilled talent in R&D i.e. career fairs, engagement sessions.
- The Government will also collaborate with reputable international recruitment agencies to facilitate industry players in recruitment services at optimised costs to identify high skilled talent in R&D that are deemed critical for the advancement of local OGSE technology.

IMPACT & KEY PERFORMANCE INDICATORS

This initiative is expected to elevate local talent capabilities through learning from world-class co-workers. It is also targeted at bringing down R&D cycles, thereby improving the quality of technology in OGSE products.

The KPI for this initiative is as follows:

1. Turnaround time for industry players to fill R&D and high skilled roles.



CASE STUDY

In Singapore, eligible companies under the Tech@SG Programme benefit from the Economic Development Board's company-level endorsement to the Ministry of Manpower (MOM), reducing the risks of rejections of their Employment Pass (EP) applications to MOM. They will also get a certain number of employment visas and renewals. Nevertheless, it is worth noting that the focus of these visas is on digitalisation and therefore not necessarily on R&D.

The UK offers a special visa category called Global Talent visa, a category for talented and promising individuals in specific sectors wishing to work in the UK. It replaced the Tier 1 (Exceptional Talent) visa on 20 February 2020. Applicants must be endorsed by either the British Academy, Royal Academy of Engineering, Royal Society, UK Research and Innovation (UKRI), Arts Council England or Tech Nation. The Global Talent visa allows successful applicants to work in the UK for up to five years without a sponsor or entry requirements such as language tests and minimum salary thresholds which apply to other UK immigration categories.

The visa also allows successful applicants to undertake research overseas without this counting towards the maximum time period allowed for absences in the context of applications for settlement. The UK is also currently planning to set up an "office for talent" to oversee visas and make it easier to attract top scientists after Brexit.

In Germany, simplified procedures apply for visas for foreign non-EU researchers, as long as a research institution has formally agreed to host the research project and the applicant has a monthly income (salary, scholarship etc.) sufficient to cover living expenses. The applicant can initially spend up to one year researching and teaching in Germany on a research visa as well as three months in other EU countries. For "highly-qualified workers" i.e. a researcher with special technical knowledge, a teacher or a research associate in a prominent position, they can immediately obtain a permanent settlement permit as long as they have a substantiated job offer in Germany and can prove they can cover their living expenses while residing in the country.

Flagship Initiative 7: CONSORTIUMS FOR OGSE PLAYERS WITH FACILITATION OF SEED FINANCING

CASE FOR CHANGE

Malaysian OGSE companies currently record low exports, partly driven by the limited appetite and resourcing to establish a long-term presence in export destinations.

OBJECTIVES

By enabling companies across the value chain to bid together, Malaysian OGSE companies will be better positioned to offer attractive and comprehensive bids, while splitting costs in export locations. This combination can include ancillary services, removing the need to look for foreign partners which offer these services. At the same time, the considerable costs of establishing long-term presences in export destinations can be divided among players in the consortium. It is important to note that the establishment of 'Malaysia OGSE Inc.' should be driven by a solid business case.

The main objective of this initiative is to increase the export competitiveness of OGSE players by enabling them to offer more comprehensive and cheaper bids across the value chain.

IMPLEMENTATION APPROACH

MATRADE is the owner for this initiative, supported by an implementation team which includes MPRC. MPRC, being the coordinator, will identify players in relevant segments with high export potential, propose partnerships to these players, discuss the help needed with players in the partnership, and identify and screen opportunities in foreign markets.

The initiative will be implemented according to the following approach:

- Ideally, a solid business case (with target market and opportunity size) for the consortiums should be designed prior to establishment in order to drive private funding for Malaysia OGSE Inc. The Government can co-fund the consortiums by providing marketing funds to facilitate their export entry/expansion.
- The Government could also facilitate the seed financing necessary to fund the initial CAPEX/OPEX required for exports. This can be conducted in several ways, from additional tax deductions for VC / PE investments in export efforts, to interest rate rebates on export debt financing through double tax deductions on interest expenses, to expanded credit guarantee schemes (E3) for more export financing access, to matching co-financing for export VC / PE investments, to setups of VC / PE funds aimed

at driving exports. VC / PE funds can be given in exchange for an equity stake in the export profits.

- Alternatively, the consortium may come together first to develop a unified brand before seeking export opportunities abroad, held together by a memorandum of understanding (MoU). Here, the Government may consider waiving/reducing certain requirements (annual audits, company secretary, registration and annual filing fees) to reduce financial barriers to entry.

This initiative may also complement existing efforts including PETRONAS' BeyondHome programme as well as any existing tax exemptions for venture capital companies and angel investors.

IMPACT & KEY PERFORMANCE INDICATORS

This initiative is expected to strengthen export competitiveness through the submission of more comprehensive bids across the value chain, while encouraging strategic cooperation for exporting. Market research costs for opportunities outside Malaysia are also expected to be streamlined and the pool of exporting SMEs is expected to expand.

These impacts will be measured by the following KPIs:

1. Average proportion of foreign revenues.
2. Number of Malaysian OGSE companies entering into joint ventures or consortiums in other countries.



CASE STUDY

The establishment of Malaysia OGSE Inc. may emulate Japan Inc., whose capabilities and cooperation were enabled by Japan's ministerial policies and *keiretsu* system, respectively.

Japan's Ministry of Economy, Trade and Industry (METI) had been instrumental in building domestic capabilities following its establishment in 1949 to coordinate industry efforts and formalise cooperation between the Japanese government and private industry. This resulted in extensive industrialisation in the 1950s.

Furthermore, METI's Foreign Capital Law granted the ministry power to negotiate the price and conditions of technology imports, allowing it to promote industries it deemed promising. The low cost of imported technology further allowed for high productivity and industrial growth.

FLAGSHIP INITIATIVE 7:
CONSORTIUMS FOR OGSE PLAYERS WITH FACILITATION OF SEED FINANCING

Apart from that, METI's establishment of Japan Development Bank also provided the private sector with low-cost capital for long-term growth, driving rapid growth in the number of construction firms.

Beyond the policy perspective, the *keiretsu* system enabled organic ecosystems of companies to export as Japan Inc. A *keiretsu* is a set of companies with interlocking business relationships and shareholdings. *Keiretsu* member companies own shares in each other. The *keiretsu* is centred on a core bank, which assesses the investment projects in each *keiretsu* company and provides loans when required, as well as its trading companies, which deal with imports and exports. Competition between different *keiretsu* can be intense.

The *keiretsu* appeared in Japan following the Allied-led dissolution of family-controlled vertical monopolies called *zaibatsu* immediately after World War 2. The *keiretsu* model is fairly unique to Japan, although the closest foreign counterpart would be the Korean *chaebol*. Examples of *keiretsu* include Toyota Group and Mitsubishi.

Flagship Initiative 8:

GRANTS/TAX BREAKS TO OGSE SEGMENTS WHICH ARE NEARLY EXPORT-READY

CASE FOR CHANGE

To further build on the impact of Flagship Initiative 7: Consortia for OGSE Players with Facilitation of Seed Financing, this initiative will target Malaysian OGSE companies which possess nearly-export-ready products or services, but still record low export levels. This has resulted from a limited appetite for exporting and resourcing hurdles which impede the establishment of a long-term presence in export destinations.

OBJECTIVES

The main objective of this initiative is to increase the export competitiveness for high-potential OGSE players by reducing the costs related to the development of export capabilities or infrastructure needed to establish their export businesses.

IMPLEMENTATION APPROACH

MATRADE will own this initiative, supported by an implementation team which includes MPRC, MIDA, BNM and MOF. MPRC, as the initiative coordinator, will conduct the due diligence necessary to ascertain OGSE segments close to being globally competitive and engage stakeholders to agree on the terms, magnitude and process of providing grants and tax breaks.

The most suitable candidates for OGSE exports are companies whose capabilities are catching up to those of global segment leaders (e.g., surface wellhead, mechanical rotating services). These segments are almost ready to export but need to develop capabilities (through R&D or tech adoption) or infrastructure (such as offices in export destinations) before becoming globally competitive. As such, these segments could benefit from grants or tax breaks which reduce the costs or capital needed to develop these capabilities or infrastructure.

The initiative will be implemented according to the following approach:

- Identify legitimate OGSE segments which are close to being globally competitive but are currently not.
- Determine the magnitude of grants and tax breaks, as well as the criteria governing the disbursement of these grants or tax breaks.
- Ascertain the expiration timelines for these grants/tax breaks.

IMPACT & KEY PERFORMANCE INDICATORS

The main impact target of this initiative is to drive higher OGSE exporting activity. This will be measured by the following KPIs:

1. Average proportion of foreign revenues.
2. Number of OGSE SMEs with export revenues or presence in export destinations.



CASE STUDY

Targeted grants and tax breaks can provide valuable aid for growing companies to build their capacity and capabilities. Capacity grants increase manufacturing capacity, enabling the higher volume production needed to meet demand. In the United States, a USD4 million capacity grant was given to Hycal Corp to support the development of a steel project redevelopment in Gibraltar, Michigan in 2015. In South Korea, a USD10 million grant was given to JFE Steel in 2019 to support the economic development for Okayama Prefecture by upgrading a blast furnace in the prefecture. In Japan, a USD170 million grant was offered to support medium-sized steel companies in stabilising the supply of raw materials from overseas (excluding POSCO/Hyundai Steel).

Process grants upgrade existing tech processes, enabling a higher quality production needed for more competitive products. In the United States, a USD1.5 million process grant was given to AK Steel to research a steel alloy with the objective of reducing core losses in electric motors. In China, a USD4.2 million grant was given to establish research facilities and develop new steel products. In addition, subsidies of 20% of research cost and rewards of USD700,000 for product sales were also granted. In Germany, process grants to improve efficiency and reduce pollution were distributed, as well as compensation for firms incurring a higher cost of renewables compared to fossil fuels.

Flagship Initiative 9:

MITIGATION OF EXPORT RISK THROUGH DEBT COLLECTION, EXPORT RISK INSURANCE AND ARBITRATION

CASE FOR CHANGE

Malaysian OGSE exporters have expressed concerns on the safety of their personnel, judicial risks and non-payment of debt in the course of exporting, particularly to developing countries. This has created a need to provide mitigation for these risks to reduce the aversion that many OGSE players have towards exporting to developing countries.

OBJECTIVES

This initiative aims to encourage local players to venture out to developing countries by mitigating the risks from exporting to these countries.

IMPLEMENTATION APPROACH

MATRADE will own this initiative, supported by an implementation team which includes MPRC. MPRC will also act as coordinator and propagate awareness of risk mitigation measures, identify geographies where players are most in need of risk mitigation measures and determine the magnitude of assistance needed.

These risks can be classified into four broad categories – financial, security, political and legal. Hence, the implementation of this initiative will be undertaken through the following approach:

- Financial risks resulting from the non-payment of debts can be mitigated through a body focusing on OGSE export receivables collection. This body would use legal avenues available in export destinations to pursue delinquent export debts. This body may also assume the risk of debt non-payment for smaller exporters.
- Security and political risks can be mitigated by expanding on and subsidising current export risk insurance efforts designed to pay out in the event of losses resulting from social or political instability in the export destination. This insurance reduces the losses arising from such events.
- Legal risks, resulting from judicial complexity at the export destination, can be mitigated through arbitration. Encouraging and providing an avenue for arbitration provides an alternative to the complex judicial process at the export destination in favour of a quicker resolution for the exporter.

IMPACT & KEY PERFORMANCE INDICATORS

This initiative aims to catalyse greater OGSE exporting activity, which will be measured by the following KPIs:

1. Average proportion of foreign revenues.
2. Number of OGSE SMEs with export revenues or presence in export destinations.



CASE STUDY

The experience of several countries in debt collection, export risk insurance and arbitration have demonstrated the value of collaborative efforts as well as legal recourse in mitigating the risks faced by companies in the course of their business. For example, French export debt collection company Coface helps exporters to collect accounts receivable. Under this model, an American firm might contact Coface's Brazil office to ascertain why a Brazilian reseller had failed to pay accounts due. This activity requires a high level of legal expertise and a global talent network and is mostly done by private sector firms.

Export Development Canada (EDC) insures exporters for up to 90% of insured losses against (i) customer bankruptcy / payment default, (ii) customer refusal to pay / accept goods, (iii) customer contract termination, (iv) hostilities in market preventing payment and (v) permit cancellation. In Australia, Australia Export Finance offers export payments insurance, with up to 100% cover against non-payment due to "defined political risks," including wars, riots, new foreign laws and the inability to convert or transfer currency.

In the UAE, the use of arbitration is so prolific that it is considered the arbitration hub of the Middle East. Arbitration has always been a common feature in engineering, procurement and construction contracts in the UAE. This is because construction work is predominantly procured by the Government from global contractors and engineering companies. These global players prefer the use of international governing law and arbitration clauses to allow disputes to be heard by arbitration centres. Changes in the law in 2018 further simplified the enforcement of arbitral awards, leading experts to expect a surge in disputes being referred to arbitration.

Flagship Initiative 10:

ENERGY EXPORT FUND

CASE FOR CHANGE

The upfront costs of establishing an export presence has also been identified as a factor in the low export levels among Malaysian OGSE companies. Therefore, this initiative aims to encourage exports by mitigating the upfront costs of establishing a presence in export destinations through the provision of an Energy Export Fund (EEF).

OBJECTIVES

The Energy Export Fund will help potential exporters expand their export appetite by reducing the costs needed to explore export opportunities and build export capacity.

The main objective of the proposed recommendation is to encourage local players to venture out to other countries by reducing the initial costs of conducting feasibility studies and marketing to those countries.

IMPLEMENTATION APPROACH

MATRADE will own this initiative, supported by an implementation team which includes MPRC. MPRC will also act as coordinator and promote the lever to industry and connect with industry to understand the magnitude of export grants needed and the activities covered.

The implementation approach for this initiative is as follows:

- The EEF will provide a refund claim fund that covers export market explorations, export capacity building programmes, and export promotions for 'export-ready' Malaysian OGSE companies. More specifically, the EEF will cover:
 - Promotion of Malaysian expertise as speakers in conferences/forums held abroad and participants in industry related awards/competitions.
 - Expenses for tender bidding as well as costs incurred in preparation and submission of project proposals for overseas projects.
 - Commercial intelligence/market reports for assessing business opportunity or projects overseas.
 - Feasibility studies for international projects overseas.
 - Services for projects undertaken overseas.
 - Presentation to potential clients for assessing business and projects overseas.
 - Preparation of prototype, system customisation and localisation to meet project requirements.
 - Initial cost of setting up office overseas.
 - Logistics cost of sending Malaysian products, equipment or merchandising for projects abroad undertaken by Malaysian companies.

IMPACT & KEY PERFORMANCE INDICATORS

With this initiative expected to increase market access for Malaysian OGSE companies in more locations, it will be measured by the following KPIs:

1. Average proportion of foreign revenues.
2. Number of export destinations for OGSE companies.



CASE STUDY

In implementing an EEF in Malaysia, the country may mirror similar initiatives in Australia, where Export Market Development Grants (EMDG) serves as a financial assistance programme for existing and aspiring Australian SME exporters. The EMDG promotes general exports and tourism, as well as certain industry exports and export-oriented joint ventures. For example, obtaining the EMDG requires exports of good/services/intellectual property (IP), promotion of inbound tourism or promotion of Australian conferences/events. Grants will also be given to approved industries and joint ventures.

The EMDG provides for market exploration and export marketing, but not for product development, production, distribution or certification. Claimable expenses include overseas representation, marketing consulting, free samples, marketing visits, trade fairs, seminars, in-store promotions, overseas buyers, advertising, registration and/or insurance of eligible IP.

One of the most notable success stories of the EMDG is SAGE Automation, an Australian provider of industrial automation and control services, which has credited the scheme for enabling the company to access the global market.

NON-FLAGSHIP INITIATIVES

The Blueprint has mapped out the following 16 initiatives that will kick off in subsequent years. These initiatives are aimed at growing the industry's capacity and capability to compete on the global stage.



NON-FLAGSHIP INITIATIVES

1

Initiative 1: OGSE INDUSTRY DATA DEPOSITORY

CASE FOR CHANGE

Industry data is scattered among different sources and lacks a regular data collection cadence. The gap, inconsistency and quality in data has impeded data-driven policy and decision-making by key members in the OGSE industry ecosystem such as policymakers, financial institutions and investors, among others.

OBJECTIVES

This initiative aims to:

- Centralise, standardise, and regularise data collection of the OGSE industry.
- Enable industry development agencies like MPRC and Ministries to conduct data-driven policy making for industry.

IMPLEMENTATION APPROACH

MPRC will own this initiative, in addition to serving as coordinator in collaborating with DOSM to standardise data to be collected and to develop the data collection cadence. The implementation team will consist of DOSM, EPU and industry associations.

The description for this initiative and the implementation approach are as follows:

- Establish an OGSE data depository to serve as a single, reliable source for OGSE industry data (e.g., employee data, revenue, etc.).
- Establish a standard set of information/data required to establish a holistic view of the Malaysian OGSE industry.
- Types of data to be collected (primary data by DOSM, secondary data by MPRC), compiled and updated over regular periods depending on the type of information (e.g., annually for revenue, every 2 years for talent, etc.).
- Any cooperation needed to obtain industry data or bring the depository to fruition should ideally be crystallised with an MoU.

IMPACT & KEY PERFORMANCE INDICATORS

The recommendation is expected to bring impact to the industry in two ways. Firstly, it will improve visibility and transparency on the state of the OGSE industry. Secondly, it enables more agile policy-making due to availability and access to pertinent industry data. This will streamline the provision of Government services and support to OGSE industry players. As such, the success metric for this initiative is to have a reliable and consistent source of data for the OGSE industry.

NON-FLAGSHIP INITIATIVES

2

Initiative 2: INDUSTRY-WIDE GUIDANCE ON GLOBAL OGSE TRENDS AND BEST PRACTICES

CASE FOR CHANGE

The OGSE industry is facing unprecedented headwinds with oil price crises taking place in quick succession. As such, industry transformation and evolution will continue to be a mainstay for the foreseeable future. Having up-to-date visibility and understanding of global OGSE trends will serve to help local OGSE companies emerge stronger to remain competitive.

OBJECTIVES

This initiative aims to enable industry players to obtain a view on relevant global trends, the Malaysian Government's view on these trends, as well as best business practices.

IMPLEMENTATION APPROACH

MPRC will drive this initiative and engage implementation stakeholders to collect information and synthesise findings, best practices, and other relevant material. The implementation team will consist of DOSM, PETRONAS and other relevant Government agencies and ministries that provide OGSE related services (e.g., MIDA, MATRADE, MIMOS, TERAJU).

The description for this initiative and the implementation approach are as follows:

- Establish a market intelligence department within MPRC to collect information on prevalent and upcoming trends for the OGSE industry and the best practices in business development, technology development, human capital development and other relevant topics in the OGSE industry across the globe.
- Collate and provide best practices guidance for accessing and securing OGSE-related support on Bumiputera participation and other enablers (e.g., finance, talent, etc.).
- Publish an industry trends guide periodically (every 1-2 years) to keep the industry up to date on future developments, best practices and outlook of industry landscape end-state. This guide may be on operator spend patterns locally and abroad, adjacent sector opportunities, upcoming tech applications, and long term OGSE-related pain points for operators.

IMPACT & KEY PERFORMANCE INDICATORS

The recommendation is expected to establish unified guidelines on the upcoming trends and best practices for all OGSE ecosystem participants. It is also aimed at increasing the subject-matter expertise and authority of MPRC on OGSE industry matters. The success metrics for this initiative are the OGSE industry's satisfaction on the guides efficacy in:

- Introducing trends to company leadership; and
- Improving their business operations.

NON-FLAGSHIP INITIATIVES

3

Initiative 3: R&D APPRENTICESHIP PROGRAMME

CASE FOR CHANGE

Local R&D talents are deemed to be more theoretically inclined. For local technology development and innovation to flourish in Malaysia, the R&D talents need to develop abilities and knowledge in conducting practical and industry-applicable R&D activities.

OBJECTIVES

This initiative aims to:

- Increase R&D students and academic researchers' exposure to industry applicable R&D.
- Enable closer collaboration between industry and academic on market-ready R&D.

IMPLEMENTATION APPROACH

This initiative will be led by MOGSC, supported by an implementation team which includes MPRC, MOHE, universities and other OGSE industry groups (MOGEC, MOSVA, MOCA). MPRC, as the coordinating body, should connect MOHE with the universities and industry groups, as well as encourage companies to participate in the programmes.

The initiative will be implemented as follows:

- R&D apprenticeship programmes enable students and researchers in universities to conduct Master or PhD thesis research in participating companies where companies (or jointly with universities) fund the research. In addition, they allow companies access to cost effective R&D talent for the duration of the programme and establish a sustainable R&D talent pipeline with top universities in the country.
- Corporate take-up could be increased by encouraging companies to leverage existing R&D tax reductions to conduct R&D activities and approved internship programme.
- As an additional incentive, companies should be allowed to partially or fully own the IP and the corresponding commercialisation rights from the research. Similarly, talent participation from academia could be enhanced by hiring participating students and researchers at the conclusion of the programme.

IMPACT & KEY PERFORMANCE INDICATORS

This initiative is expected to impact the industry in three ways. First, R&D talent is expected to take up less time to ramp up to industry needs. Second, academia-industry collaboration on research is expected to increase, thereby bridging the applied science gap. Third, the overall R&D ecosystem for the OGSE industry is expected to strengthen.

This impact could be measured in many ways, including:

- The size of R&D departments in OGSE companies.
- The percentage of local participation in R&D related roles in OGSE.

NON-FLAGSHIP INITIATIVES

4 Initiative 4:

SECONDMENT OF LOCAL TALENT TO FOREIGN R&D CENTRES

CASE FOR CHANGE

A robust R&D ecosystem and R&D collaboration are vital in creating global OGSE champions. Malaysia's R&D landscape for OGSE technology is perceived to be lagging behind regional peers, due partly to a lack of awareness and conviction of R&D among Malaysian OGSE companies.

OBJECTIVES

This initiative aims to:

- Boost technology and IP development by leveraging the R&D capabilities and ecosystems in other countries.
- Bridge the transitional period in setting up local R&D while also nudging industry players to be more R&D-focused.

IMPLEMENTATION APPROACH

MPRC is the owner for this initiative, supported by an implementation team which includes MOSTI, MOGSC, MOHE and foreign universities with strong OGSE research (e.g. University of Aberdeen, University of Stavanger). MPRC, being the initiative coordinator, will also engage industry players to explore research topics of interest and discuss co-financing/commercialisation sharing/talent secondment models as well as engage foreign academic institutions in potential areas of collaboration.

The initiative is planned for implementation as follows:

- Foreign R&D centres alleviate the lack of R&D culture by tapping into stronger R&D ecosystems available in other countries while giving time for local R&D ecosystem to grow. Additionally, seconding local talents to these centres could help them understand R&D culture and repatriate this understanding into the local R&D ecosystem.
- Crystallising these collaborations involve identifying/engaging target academic institutions/personnel, co-funding selected research projects with industry and seconding local talents to these project teams. The intellectual property and/or commercialisation rights resulting from this collaboration would be jointly owned by the investing company and the project team, and potentially the initiative owner.
- Awareness of research opportunities with foreign R&D centres could even form the basis for industry research consortiums, involving multiple (potentially competing) companies and research institutes, which could help improve R&D intensity within the OGSE industry. Funding within such consortiums may be similar to current practices in Joint Industry Projects (JIP).

IMPACT & KEY PERFORMANCE INDICATORS

This initiative is expected to impact the industry by enhancing local R&D outputs which will create a greater impact on the innovation in the field as well as increasing the proportion of local talent involved in R&D as opposed to more routine engineering work.

This impact could be measured through:

- The number of foreign R&D collaborations on OGSE.
- The average number of citations for each Malaysian OGSE patent (the higher the average, the more insightful the research output).
- The number of OGSE patents filed by Malaysian researchers or companies.
- The number of OGSE patents filed in Malaysia by non-Malaysian researchers or companies (the higher the number of patents, the more highly that Malaysia is viewed as an OGSE hub).
- The percent of OGSE workforce involved in R&D.

NON-FLAGSHIP INITIATIVES

5

Initiative 5: SUPPORT FOR R&D ACTIVITIES AND HIGH-VALUE MANUFACTURING FROM MNCs

CASE FOR CHANGE

Local OGSE companies' involvement in R&D activities are limited, owing to a lack of awareness and a conviction in the process of R&D. As such, high-tech OGSE manufacturing has lagged as well. However, imbuing the local R&D landscape with the involvement of MNCs in academic institutions with OGSE research interests can help stimulate the technological development of the sector and bring indirect, long-term benefits to the sector.

OBJECTIVES

This initiative aims to:

- Allow MNCs' R&D cultures and best practices to diffuse into the local OGSE industry through local universities that have partnered with the MNCs.
- Increase local industry exposure to high-tech manufacturing activities, thereby enabling them to move to more value-adding parts of the value chain.

IMPLEMENTATION APPROACH

MIDA will own this initiative, supported by an implementation team which includes MPRC, MIMOS and local universities with OGSE research (e.g. UM, UTM, UTP). MPRC, being the coordinator, would engage MIDA to discuss target MNCs, the package of incentives to be offered and the terms of offering. MPRC would also obtain buy-in from local academic institutions and support the initiation of conversations with target MNCs.

The description for this initiative and the implementation approach are as follows:

- The R&D centres set up by MNCs should ideally involve local academic institutions. This will enable the R&D culture in these MNCs to percolate into local institutions. The strengthened R&D culture locally could potentially help in future academic collaborations with local companies.
- Similarly, any high-tech manufacturing activities in Malaysia should ideally involve locals in the most complex or value-adding parts of the activities. This ensures that local talents gain the experience needed in high-technology manufacturing to be able to pass the know-how onto local companies.

IMPACT & KEY PERFORMANCE INDICATORS

Similar to Initiative 4, this initiative is expected to impact the industry by producing more insightful R&D output and increasing the proportion of local talent involved in R&D or high-value manufacturing.

This impact could be measured with:

- The average number of citations for each Malaysian OGSE patent (the higher the average, the more insightful the research output).
- The number of OGSE patents filed by Malaysian researchers or companies.
- The number of OGSE patents filed in Malaysia by non-Malaysian researchers or companies (the higher the number of patents, the more highly that Malaysia is viewed as an OGSE hub).
- The percent of OGSE workforce involved in R&D.
- The average employee productivity (proxied by revenue per employee).

NON-FLAGSHIP INITIATIVES

6

Initiative 6: OGSE IP MARKETPLACE

CASE FOR CHANGE

Risk and uncertainties permeate R&D activities at all stages. Business uncertainty may introduce further concerns and affect long-term R&D efforts that are needed to build deep OGSE capabilities. An IP marketplace would alleviate this uncertainty by assigning value and quantifying R&D (via IP Value).

OBJECTIVES

This initiative aims to:

- Quantify the benefits of R&D outputs (i.e. patents or trademarks).
- Expose players to new industry technologies and companies, especially local ones.
- Enable industry players to build on existing patents by licensing or buying them.
- Limit the downside risk for R&D by quantifying the salvage value for unused patents.

IMPLEMENTATION APPROACH

MPRC will lead this initiative, supported by an implementation team which includes MIMOS, MTDC, PETRONAS and local universities with OGSE research (e.g. UM, UTM, UTP). Entities with IP commercialisation experience, such as NanoMalaysia, could also be consulted with or involved in implementation.

It is recommended that the owner collaborates with Government agencies to develop the best framework for managing and screening applications as well as maintaining independence while expanding the commercial reach of the marketplace.

MPRC, being the coordinator, would also conduct due diligence to select potential patents, identify potential patent holders to approach and prepare a guide on patent appraisal for OGSE firms.

The description for this initiative and the implementation approach are as follows:

- The OGSE IP marketplace enables companies to publicly list patents that they are willing to sell (with a minimum price) and other companies to bid for these patents.
- Beyond patents, this marketplace can even extend to trademarked designs produced by design houses.

IMPACT & KEY PERFORMANCE INDICATORS

This initiative is expected to impact the industry by increasing spending on R&D, technology development and technology acquisition; strengthening Malaysia's status as an OGSE hub, drawing even more investment into Malaysia's OGSE ecosystem and increasing recognition for local OGSE tech leaders.

This impact could be measured by:

- The number of OGSE patents filed by Malaysian researchers.
- The number of Malaysian OGSE patents sold or licensed.
- The number of OGSE patents filed in Malaysia by non-Malaysian researchers or companies (the higher the number of patents, the more highly that Malaysia is viewed as an OGSE hub).
- The creation of companies focused on developing and licensing patents instead of manufacturing.

NON-FLAGSHIP INITIATIVES



Initiative 7: SKILLED WORKER RETENTION PROGRAMME

CASE FOR CHANGE

The OGSE industry workforce is likely to contract in the near term as a result of the 2020 oil price crisis. It is imperative for the industry to retain high skilled local talents to stem the loss of critical expertise. OGSE companies may have to shift into non-permanent hiring of employees via recruiting agencies to optimise operation costs while maintaining the capability needed to operate. However, not all OGSE firms are able to afford such a move.

OBJECTIVES

This initiative aims to:

- Encourage and enable industry players to effectively retain highly skilled talent during volatile periods by creating jobs and maintaining wage levels.
- Reduce the impact of permanent talent loss and subsequent loss of expertise.
- Enable OGSE companies to hire OGSE talents on a need-to basis during downturns.
- Enable OGSE talents to discover available jobs in the market.

IMPLEMENTATION APPROACH

This initiative will be steered by MPRC, which will also act as coordinator to collaborate with industry groups in identifying critical skills and roles to retain, advise MOHR and MOF on adequate incentives to provide and promote utilisation of job matching platforms to both OGSE companies and talents. The implementation team will consist of MIDA, MOF, MOHR, HRDF, TalentCorp and industry associations.

The description for this initiative and the implementation approach are as follows:

- Provide adequate and attractive incentives for companies to retain high and semi-skilled local OGSE talents in their company especially during economic downturns. Proposed incentives include:
 - Limited period tax break or existing underutilised resources e.g., levies based on cost of retaining target employees.
 - Extend/adapt existing PENJANA programme for OGSE industry.
- Encourage companies to temporarily second high and semi-skilled OGSE talent if there is insufficient OGSE work. The Government may potentially subsidise their salaries during the transition back to OGSE. Proposed secondments include:
 - To develop applied R&D centres or skill development centres.
 - To work in adjacent sectors (e.g., construction, manufacturing).
- If talent cannot be retained during a downturn, initiative owner to proactively channel employers especially SMEs and talents to existing free job matching platforms (i.e., MOHR's JobsMalaysia) as alternative to recruiting agencies and the present informal means of job-seeking via WhatsApp, Telegram etc.
 - Job matching platform is to be refined to include clear tagging of OGSE companies and roles advertised for easy user navigation.

IMPACT & KEY PERFORMANCE INDICATORS

The recommendation is expected to impact the industry in two ways. Firstly, highly skilled local talent will be retained in the local OGSE industry, minimising permanent loss of expertise. Secondly, the recommendation allows a healthy local OGSE talent pool to be maintained.

The success metrics for this initiative are:

- The percentage of local participation in high-skilled OGSE roles.
- Employee satisfaction in OGSE industry companies.
- Size of demand gap for OGSE talent among local companies.

NON-FLAGSHIP INITIATIVES

8

Initiative 8: OGSE CAREER PROMOTION

CASE FOR CHANGE

The OGSE industry has long attracted top, bright talents to the sector. But the industry is increasingly finding it challenging to build a healthy talent pipeline due to competition from industries such as technology and renewable energy, which are considered to be more attractive to young talents. This may result in undersupply of talents to drive the OGSE industry forward.

OBJECTIVES

This initiative aims to:

- Enable the OGSE industry to continue to attract talent, primarily by emphasising its non-financial aspects, in the foreseeable future in light of stronger competition from other industries.
- Upskill and equip existing OGSE workforce with certification.

IMPLEMENTATION APPROACH

MPRC will drive this effort and coordinate collaboration among industry groups and between industry groups and Government agencies (e.g. MOE and MOHE for career promotion activities). The implementation team will consist of industry associations, MOE, MOHE, MOHR, HRDF and TalentCorp.

This initiative and its implementation approach can be described as such:

- Career promotion effort to promote careers in OGSE in secondary schools, vocational schools, universities, and career placement centres.
- To encourage upskilling of existing OGSE talents through promotion of relevant certification.
- Providing incentives to OGSE industry groups to participate in joint career promotion activities (e.g. career fairs, info sessions for career counsellors, OGSE industry career awareness campaigns, etc.) through cost sharing with MPRC on promotional activities and promoting improved visibility into future talent pipeline.

IMPACT & KEY PERFORMANCE INDICATORS

The recommendation is expected to create a healthy talent for the OGSE industry and maintain the industry's position as a leading destination for top talents in the job market.

The success metric for this initiative comprises:

- The size of demand gap for OGSE talent among local companies.

NON-FLAGSHIP INITIATIVES**9****Initiative 9:
EXPANSION OF ENGINEERING COURSES****CASE FOR CHANGE**

Global trends among major oil & gas companies and OGSE companies point to an expansion in project activities at the company level from traditional oil & gas operations to include renewable energy in the medium-to-long term. Talents entering the OGSE workforce of the future will need to be equipped with a holistic education of the energy landscape and the necessary training on the energy transition.

OBJECTIVES

This initiative aims to:

- Prepare and attract future talents for a more expansive energy industry that includes fossil fuel and renewable energy. This could also potentially present graduates with higher wages due to their added competitiveness.
- Set up talent pool in Malaysia to attract OGSE and energy firms with renewable energy segments to establish operations in Malaysia.

IMPLEMENTATION APPROACH

MOHE will drive this initiative, with MPRC acting as coordinator in facilitating the discussion between MOHE, major universities and industry associations. The implementation team will consist of local universities e.g. UM, UTM and UTP, industry associations, MIDA, MBOT and TalentCorp.

The description for this initiative and the implementation approach are as follows:

- Promote expansion of existing OGSE-related programmes/curriculum in national universities to include OGSE adjacent sector topics (e.g. renewable energy, construction) as electives.
- Broadening scope of curriculum to also offer new courses in Energy Engineering.
- Develop curriculum with industry input and collaboration with leading renewable energy organisations (and other adjacent sector organisations) and to promote talent placement therein.
- Creation of scholarships to draw talent into the enhanced or expanded engineering courses.
- Pilot curriculum in 2-3 selected universities and expand to other interested universities in the future.

IMPACT & KEY PERFORMANCE INDICATORS

The expected impact of this recommendation is to build a talent pool ready for future energy to enable the OGSE and greater Malaysian industry enter the new energy era.

The success metric for this initiative can be measured by:

- The percentage of students graduating from the new programmes that obtained jobs in OGSE, renewable energy or the oil & gas industry.

NON-FLAGSHIP INITIATIVES

10

Initiative 10: EXPERT MENTORSHIP FROM EX-OGSE TALENTS

CASE FOR CHANGE

The OGSE industry workforce is likely to contract in the near term as a result of layoffs in response to the 2020 oil price crisis. This is expected to impact the workforce across all segments and roles. It is imperative to ensure transfer of knowledge in the industry from skilled retirees and OGSE talents who have left the industry voluntarily or involuntarily.

OBJECTIVES

This initiative aims to enable OGSE companies to retain critical expertise and address gaps in highly skilled positions during and after this volatile period. It is expected that this will also lead to more jobs and higher wages in OGSE, primarily resulting from the higher productivity attributable to upskilling from expert mentors.

IMPLEMENTATION APPROACH

The owner to drive this initiative is TalentCorp, which will also coordinate in facilitating discussions between MOHR, MOF and the industry to determine the appropriate incentive for the industry to utilise ex-OGSE talents as mentors. The implementation team would include MOF, TalentCorp and industry associations.

The description for this initiative and the implementation approach are as follows:

- Encourage ex-OGSE skilled talents to return to the OGSE industry in a full-time or part-time capacity as internal trainers, mentors and/or subject matter experts in industry training centres or academia.
- Topics to also be functionally-focused, i.e., to include the topic of innovation.
- Extend coaching to selected CEOs/management especially for SME OGSE companies to inculcate global mindset to accelerate business forward.
- Enables companies to bridge the expertise gap by bringing experienced workers to impart critical knowledge to younger employees and budding leaders.
- Incentivise companies to hire skilled retirees with double tax deductions covering the hired retirees' salary and capped by the median salary of the role – incentive must be renewed on an annual basis and contingent on retiree meeting critical subject matter requirements.

IMPACT & KEY PERFORMANCE INDICATORS

There are two expected impacts of the recommendation. Firstly, the OGSE industry will have proper knowledge transfer in critical industry expertise. Secondly, industry players will also gain access to a contingent of highly-skilled labour pool to bridge the skills gap of incoming talents.

The success metric for this initiative is:

- The satisfaction of OGSE companies on the quality and capability of their workforce.

NON-FLAGSHIP INITIATIVES

11

Initiative 11: ENGAGEMENTS WITH FOREIGN GOVERNMENT/ NATIONAL OIL COMPANIES (NOC) IN HIGH- POTENTIAL MARKETS

CASE FOR CHANGE

Trade barriers to OGSE trade and exports of goods and services could affect the industry's competitiveness and access to markets with high potential. To mitigate this, conducting ongoing dialogues with foreign NOCs could help build rapport whilst also establishing potential project opportunities in these markets.

OBJECTIVES

This initiative aims to alleviate trade barriers and potentially grant preferential project access to Malaysian OGSE products.

IMPLEMENTATION APPROACH

MATRADE is the owner for this initiative, supported by an implementation team which includes MPRC and Wisma Putra. MPRC, being the coordinator, would engage the owner on desired outcomes and timelines when approaching NOCs in high-potential markets, establish the cost of these feasibility studies and liaise with industry and financiers on the financing needed.

The description for this initiative and the implementation approach are as follows:

- Short-term efforts could be focused on high potential oil & gas markets in West Africa (Nigeria, Cameroon, Gabon, Congo), East Africa (Mozambique, Tanzania) and Southeast Asia (Indonesia, Myanmar).
- Mid-term efforts are likely to be focused in Latin America (Mexico, Brazil) and Central Asia (Kazakhstan). These talks should culminate in increased willingness by these NOCs to take on Malaysian exporters and potentially an agreement to undertake feasibility studies together with Malaysian exporters.
- These feasibility studies could be co-funded by the Government, interested OGSE players and foreign NOC.
- The projects could be supported with cheaper financing from Malaysian development financial institutes (DFIs – e.g. EXIM Bank) and a MATRADE-appointed project delivery head to ensure project success.

IMPACT & KEY PERFORMANCE INDICATORS

This initiative is expected to impact the industry primarily by increasing market access in more geographies.

This impact could be measured by:

- Average proportion of foreign revenues.
- The number of export destinations for OGSE companies.

NON-FLAGSHIP INITIATIVES

12

Initiative 12: OGSE FINANCING CENTRE OF EXCELLENCE (CoE)

CASE FOR CHANGE

The OGSE industry suffers from gaps in understanding on behalf of both the providers of financing and funding, as well as their potential recipients. On one end, financial institutions and investors face difficulties in obtaining full information regarding OGSE companies and the sector. Thus, some investors and financial institutions have chosen to minimise exposure to OGSE due to lack of awareness.

OBJECTIVES

Creating a CoE for OGSE financing will help:

- Provide a universal source of information on the OGSE industry and its constituent companies for the providers of financing.
- Facilitate a more streamlined financing journey for companies through application coordination and guidance.
- Connect OGSE companies and appropriate providers of financing, as well as the right representatives of those providers.

IMPLEMENTATION APPROACH

MPRC will own and coordinate this initiative and be responsible for relaying relevant information to companies, as well as connect financial institutions and investors with OGSE companies. The implementation team will consist of stakeholders involved in the broader financing ecosystem, such as BNM, MTDC, MIDA, and indirectly, other financial institutions such as development banks, banks, and investment houses. Obtaining operator support in securing financing could also help advance this initiative.

The broad description and implementation approach of this initiative are as follows:

- Set-up a team responsible for coordinating financing activities for the industry by executing the following activities:
 - Collating solutions provided and advertised by all types of financial institutions, tailored to OGSE. For example, loans, relief facilities, and incentives available for companies.
 - Providing guidance on all available financing and incentive schemes. For example, credit enhancement options and alternative funding options such as peer-to-peer lending.
 - Providing an industry rating of OGSE companies to supplement and enhance creditworthiness of applicants based on a clear methodology. Metrics for the methodology may include, but is not limited to, a company's historical order books, its segment's growth prospects, and expected project pipeline.
 - Connect OGSE companies to relevant financing representatives from relevant financial institutions.
 - Provide additional information on the industry for banks and prospective investors where requested.
- Set-up a platform to find available opportunities and facilitate bulk application for financing and incentive schemes. Over time, these could include loans, tax incentive e-applications and even relief facilities.

IMPACT & KEY PERFORMANCE INDICATORS

The recommendation is expected to enable faster application turnaround times for financing and funding and lead to greater exposure of the OGSE industry to alternative and new forms of financing. For example, peer-to-peer lending, private equity, and convertible bonds.

Success metrics for this initiative comprise of:

- The application volume and success rate for conventional and alternative financing solutions provided by financial institutions.
- The satisfaction rate of players and financial institutions which leverage on this Centre of Excellence.

NON-FLAGSHIP INITIATIVES

13

Initiative 13: OGSE FINANCIAL MANAGEMENT WORKSHOPS

CASE FOR CHANGE

Industry associations, operators as well as agencies have all noted that OGSE companies could do more to optimise and manage their finances, in light of recent and previous oil price crises. Some of the key gaps seen in OGSE companies in financing strategy include working capital management and alternative financing options, thereby leading to a pervasive over-reliance on corporate loans.

OBJECTIVES

This initiative aims to:

- Cascade OGSE-specific financial management practices to the entire industry in order to elevate the overall financial position of local OGSE companies.
- Provide exposure to and guidance on frontier and innovative financing opportunities as well as best practices.

IMPLEMENTATION APPROACH

The owner for this recommendation would be MOGSC. MPRC would serve as the coordinator, by facilitating the communication between industry leaders, associations and financial institutions to drive participation. The implementation team for this initiative would also include other industry associations and SME Corporation.

The broad implementation approach of this initiative is as follows:

- Leverage current industry association working groups, which are typically categorised by OGSE sub-segments and existing seminar platforms to establish dedicated sessions for industry leaders to share their financing experience with the wider OGSE companies. For example, leaders could run through their experience and good practice managing working capital. The topics covered by workshop mentors or coaches could be segment-specific (e.g., financing relevant to OSV) or applicable to the entire OGSE industry.
- Invite representatives from funds, banks and other financial institutions to supplement sessions or conduct separate sessions on financing success stories and alternative options available in the market.
- MPRC and industry associations to promote these opportunities by leveraging existing network and communication channels.

IMPACT & KEY PERFORMANCE INDICATORS

This initiative is expected to contribute to better long-run financial literacy and health of the industry. Additionally, it would pave the way for increased access to conventional and alternative financing, which are key components to facilitating industry development.

Success metrics for this initiative include:

- The number of unique participants of the workshops and workshop satisfaction rate surveyed yearly.
- Qualitative feedback from banks on OGSE vendors' financial literacy.
- The share of alternative financing sources as a proportion of total financing.

NON-FLAGSHIP INITIATIVES

14

Initiative 14: ALTERNATIVE FINANCING PLATFORM FOR OGSE

CASE FOR CHANGE

Loan financing is constrained for OGSE companies due to a mismatch in risk appetite between OGSE companies, startups in particular and lenders. OGSE companies are also deemed to be over-leveraged, with limited awareness on alternative financing options. The alternative financing options may serve as a workaround for OGSE, due to larger risk appetites.

OBJECTIVES

This initiative aims to:

- Diversify financing sources away from traditional loans for Malaysian OGSE companies.
- Create the financing pathway needed for companies to take risks and engage in innovation, exports, and other growth opportunities.
- Raise awareness of the domestic OGSE market among local and foreign venture capital as well as private equity funds.

IMPLEMENTATION APPROACH

MPRC is proposed to lead and coordinate this initiative and will be responsible for promoting the use of this platform by OGSE companies and alternative financiers. The broader implementation team would include, where necessary, MTDC, SME Corp, MIDA, and Securities Commission.

Indirectly, the team would also involve Ekuinas and other PE firms, Cradle and other VC firms, as well as equity crowdfunding platforms. Other relevant stakeholders may be included in the implementation team where input is critical. This refinement is to be taken up by the initiative owner.

The broad implementation approach of this initiative is as follows:

- Set up a platform where any OGSE company seeking alternative financing can be listed, and where any venture capital, private equity, or equity crowdfunding firm can find potential investees. This also applies to other players looking to invest in OGSE such as large OGSE companies or conglomerates in other industries.
- Contact the relevant funds and companies to raise awareness of the platform and discuss available investment options.
- Identify and select potential OGSE investees to be highlighted as high-potential investments. Indication of investment potential are based on OGSE company rating provided by the Centre of Excellence.

IMPACT & KEY PERFORMANCE INDICATORS

The recommendation is expected to drive higher spend on riskier activities in the market such as direct research and development as well as market expansion, resulting from increased alternative financing. Secondly, and more broadly, the industry would be exposed to more diversified financing sources with less reliance on loan financing.

Success metrics for this recommendation are based on measures of alternative and equity financing present:

- The number of successful alternative investments in the OGSE industry.
- Industry debt-to-equity ratio, where a lower figure is desirable in this scenario.
- The industry's median paid-up capital.

NON-FLAGSHIP INITIATIVES

15

Initiative 15: SPECIAL GROWTH FACILITY FOR NASCENT ADJACENCIES

CASE FOR CHANGE

Several segments within the OGSE industry are exposed to volatility in oil prices and macroeconomic fluctuations, which hinder stable and reliable cash flows. At the same time, there is a gap for financing new ventures into adjacent sectors such as renewables, e.g. offshore wind installation. This initiative is linked closely to the outcomes of the National Energy Policy and thus will be included as a set of recommendations under the Policy.

OBJECTIVES

This initiative aims to:

- Provide a direct financial platform for OGSE companies to move into adjacent sectors to build resilience.
- Facilitate the smooth and gradual transition of the industry into adjacencies within new energy.

IMPLEMENTATION APPROACH

The owner and coordinator for this initiative is to be determined by the National Energy Policy. For a preliminary view, it is proposed that the implementation team includes representatives from Government, industry, and financial institutions. This may include, but is not limited to, the Ministry of Water, Land, and Natural Resources, BNM, Development Financial Institutions such as Bank Pembangunan, and industry associations. Other relevant stakeholders may be included in the implementation team where input is critical. This refinement is to be taken up by the initiative owner.

The broad implementation approach of this initiative is as follows:

- Set-up a loan facility designed for OGSE companies to diversify their business and develop resilience from oil price downturns through the following avenue:
 - Expanding into adjacent industries in new energy. This may include but is not limited to decommissioning, renewable installation, and regasification.
- Loans provided should be conditional and tied to the underlying project or exercise related to new energy. For example, to conduct acquisitions of other companies with relevant capabilities.
- The facility should leverage growth funds provided by Development Financial Institutions, backed by guarantees (or even interest rebates) by credit enhancement agencies.

IMPACT & KEY PERFORMANCE INDICATORS

The recommendation is expected to increase sector resilience from macroeconomic downturns such as a dip in oil prices. It should also provide easier access to finance and better financial health for the industry, as a result of a smooth transition into new energy.

Success metrics for this recommendation are based on exposure of OGSE companies in adjacent sectors such as new energy. Primarily, this would be:

- The percentage of OGSE companies' revenue derived from adjacent sectors.

NON-FLAGSHIP INITIATIVES

16

Initiative 16: CENTRALISATION OF BUMIPUTERA ASSISTANCE

CASE FOR CHANGE

Cross-sector Bumiputera initiatives (e.g., Bumiputera Enterprise Enhancement Program, etc.), which are relevant to the OGSE industry are currently spread between multiple agencies, ministries, and industry players. While OGSE-specific initiatives under the jurisdiction of PETRONAS are already accessible through a single PETRONAS point of contact, other Government agencies and organisations have their own set of processes and timelines, leading to a lack of awareness, transparency and accessibility of the existing initiatives. This has translated into low take-up rates among OGSE companies.

OBJECTIVES

This initiative aims to:

- Streamline the application process to maximise access to Bumiputera initiatives for OGSE companies from ministries and agencies.
- Minimise delays and implementation overlap of Bumiputera initiatives.
- Enable the pooling of cross-agency resources, and thus facilitate fit-for-purpose OGSE Bumiputera Support.

IMPLEMENTATION APPROACH

The owner for this initiative is TERAJU. MPRC will coordinate and connect Bumiputera companies to TERAJU and provide technical evaluations where necessary for any of the programs. In addition, the implementation team consists of MEDAC, acting as the implementation partner, SME Corp, and MATRADE. Other relevant agencies may be included in the implementation team, should they also offer OGSE-related Bumiputera assistance. This refinement is to be taken up by the initiative owner. In addition to the initiatives included herein, PETRONAS will continue their own suite of Bumiputera-related programmes that they will continue to administer from PETRONAS.

The broad implementation approach of this initiative is as follows:

- Set-up a one-stop centre for Bumiputera companies to apply for the programmes relevant to OGSE, conducting the following activities:
 - Take in applications for Bumiputera initiatives, direct them to the relevant initiatives' owners. For example, applications to the Bumiputera Export Development Programme would be directed to MATRADE.
 - Where practical, track the application status, approval rate and evaluate the success of the initiatives upon completion. This activity would aid the monitoring of initiative take-up and guide recommendations for improvement.
 - Promote the universe of programmes available and collate their respective application requirements to be handy for prospective applicants. These requirements may include, but are not limited to, the eligibility criteria, required documents, and technical requirements.
 - Coordinate the customisation and/ or combination of initiatives from different agencies where synergies are present to maximise scale and thus develop fit-for-purpose solutions for the OGSE industry.
- To facilitate visibility, develop a platform which gives an updated view of all the available programs applicable to OGSE together with requirements. In addition, this serves to enable bulk applications, or an expression of interest by companies regarding the initiative(s) in question.
- Assign OGSE points of contact from relevant agencies and ministries for clear interfacing with the centre.

IMPACT & KEY PERFORMANCE INDICATORS

The recommendation is expected to create greater OGSE take-up in Bumiputera initiatives as a result of streamlining the application process for companies. Secondly, there should be better cross-agency collaboration to deliver OGSE-specific Bumiputera solutions, with the existence of a single node to connect the relevant parties where necessary and drive co-creation of initiatives.

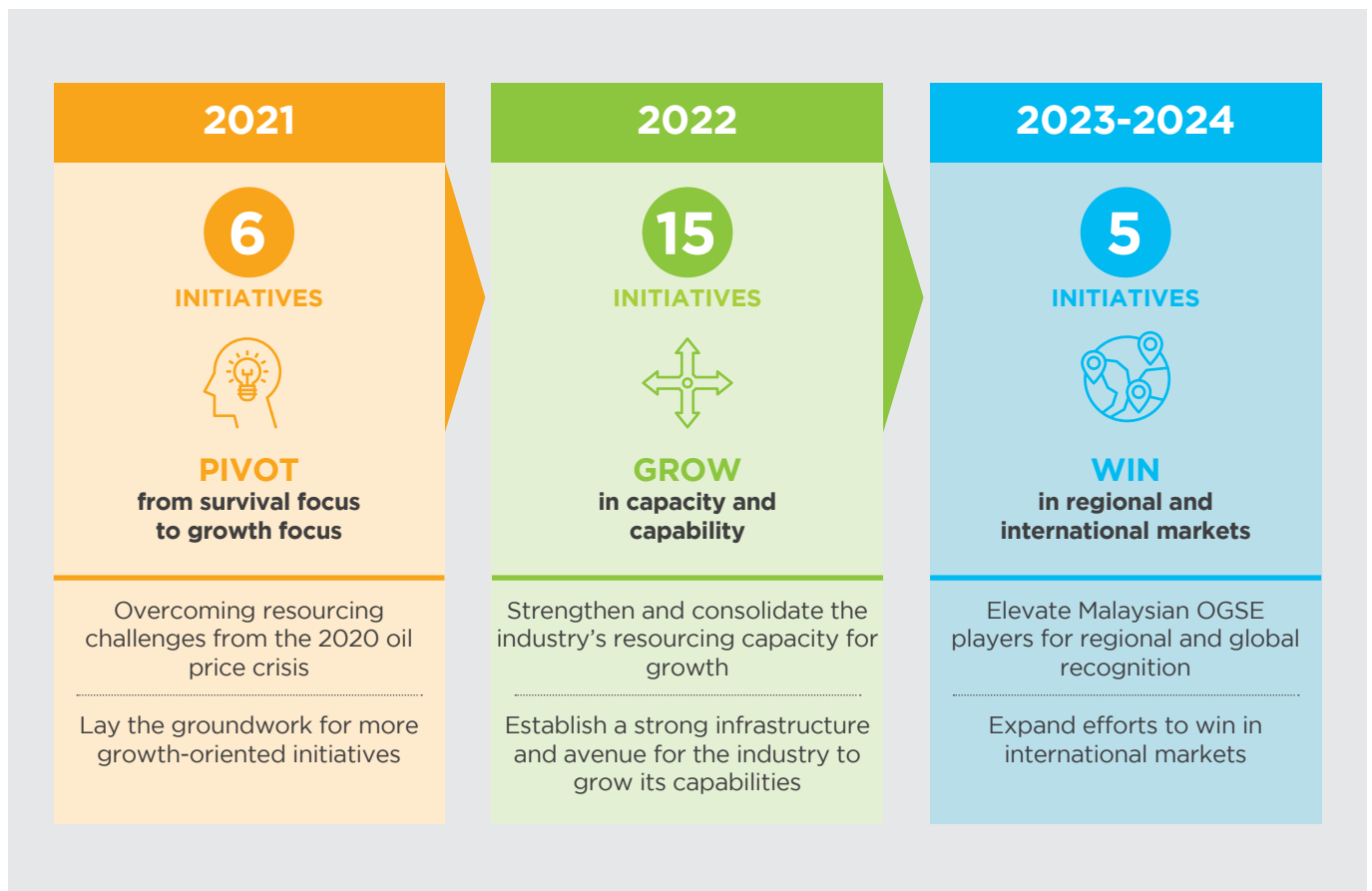
As such, success metrics for this recommendation is based on two measures of participation:

- The first is the percentage of successful OGSE applicants or recipients of the associated Bumiputera programmes.
- The percentage of Bumiputera available funding disbursed to OGSE recipients.

ACTION PLAN

The Blueprint's 10 Flagship Initiatives are targeted to be implemented in **3 stages** from 2021. This will allow the Malaysian OGSE industry to gradually pivot from its existing state towards **growing capacity and capability in the medium-term** and achieving an established presence in regional and international markets over the long-term.

As the Blueprint progresses, more initiatives will commence, with the focus eventually moving towards technological and export "big rocks".



ACTION PLAN

PHASE 1

1

Making the Pivot from Survival to Growth Focus

Six initiatives (3 flagships and 3 non-flagships) will kick off in 2021 to support the industry in overcoming resourcing challenges from the 2020 oil price crisis and lay the groundwork for more growth-oriented initiatives.

Flagship Initiative 1:
Government point of
contact for OGSE

Flagship Initiative 3: OGSE
company recognition

Flagship Initiative 8:
Grants/Tax Breaks to
OGSE Segments Which
Are Nearly Export-Ready

Non-Flagships

- Skilled Worker Retention Programme
- Financial Management Workshops
- Centralisation of OGSE Bumiputera Assistance

PHASE 2

2

Growing Industry Capacity and Capability to Compete Effectively

In 2022, 15 initiatives (7 flagship, 8 non-flagship) will be carried out. These initiatives aims to **strengthen and consolidate** the industry's resourcing capacity for growth while also establishing a strong infrastructure and avenue for the industry to grow its capabilities.

Flagship Initiative 2: Industry
consolidation

Flagship Initiative 4: Applied
R&D centres

Flagship Initiative 5: Tech
adoption financing, tax
deductions, and tariff waivers

Flagship Initiative 6: Overseas
researcher outreach programme

Flagship Initiative 7:
Consortiums for OGSE players,
with facilitation of seed
financing Government point of
contact for OGSE

Flagship Initiative 9: Mitigation
of export risk through debt
collection, export risk insurance
and arbitration

Flagship Initiative 10: Energy
Export Fund

Non-Flagships

- OGSE Industry Data Depository
- In-shoring of R&D Activities and High-Value Manufacturing from MNCs
- OGSE Career Promotion
- OGSE Financial Centre of Excellence
- Alternative Financing Platform for OGSE
- Industry Wide Guidance on Global OGSE Trends and Best Practices
- R&D Apprenticeship Programme
- Expert Mentorship from ex-OGSE talents

PHASE 3

3

Winning in Regional and International Markets

In this phase, the Blueprint is expected to be in full swing. Thus, these 5 initiatives will be carried out to further **elevate Malaysian OGSE players** to be well-positioned for regional and global recognition and expand efforts to **win in international markets**.

Non-Flagships

- Secondment of Local Talent to Foreign R&D centres
- OGSE IP marketplace
- Expansion of Engineering Courses
- Special Growth Facility for Nascent Adjacencies
- Engagements with foreign governments or NOCs in high-potential markets

MOVING FORWARD

The implementation of the Blueprint's initiatives is paced in a manner that allows realistic milestones to be **consistently set and monitored** for all flagship and non-flagship initiatives. This will commence with the laying of groundwork for growth levers in 2021, followed by supporting the industry to develop its capacity and capability infrastructure in 2022 to fuel future growth.

By 2023, the industry is expected to be able to **reap the results of growth levers**, and by 2024, the industry should be in a good position to **capture more global markets**. In 2025, the industry should already be at a strong level of take-up for the various initiatives.

Moving into 2026 and gradually into 2030, impact will continue to be realised from the by-then-established full set of supportive blueprint initiatives.

The concerted and continued cumulation of impact will continue to propel the industry towards the 2030 targets.

Milestones from 2026-2030 would continue along outcome measures for the set of Blueprint initiatives. These are some of the broad **2026-2030 milestones** and outcomes of all flagship and non-flagship initiatives that will be tracked:



INDUSTRY-WIDE

1. Uptake of government services and support among OGSE companies
2. Satisfaction of government services and support among OGSE companies
3. OGSE industry satisfaction on the guide's efficacy in introducing trends to the company leadership
4. OGSE industry satisfaction on the guide's efficacy in improving their business operations
5. Adoption rate of OGSE company status



TALENT DEVELOPMENT

1. Percentage of students graduated from the expanded engineering programs that obtained jobs in the OGSE, renewable energy, or oil & gas industry
2. Satisfaction of OGSE companies on quality and capability of their workforce



FINANCIAL STRENGTH

1. Application volume and success rate for financing solutions provided by financial institutions
2. Number of successful alternative investments in OGSE
3. Percentage of OGSE companies' revenue derived from adjacent sectors



TECHNOLOGY DEVELOPMENT

1. Number of Malaysian OGSE patents filed
2. Average citation per Malaysian OGSE patent
3. Aggregate and median R&D spend
4. Number of R&D collaborations with the applied R&D centre
5. Percent of OGSE workforce involved in R&D
6. Average productivity (revenue per worker)



EXPORT CAPACITY

1. Average proportion of foreign revenues
2. Number of export destinations for OGSE companies



BUMIPUTERA PARTICIPATION

1. Percentage of Bumiputera funding disbursed to OGSE recipients

GLOSSARY

ABM	Association of Banks Malaysia
BNM	Bank Negara Malaysia
CAPEX	Capital Expenditure
DOSM	Department of Statistics Malaysia
E&P	Exploration and Production
EPCI	Engineering, Procurement, Construction and Installation
EPU	Economic Planning Unit
ESG	Environmental, Social and Corporate Governance
EU	European Union
FDI	Foreign Direct Investment
FELDA	Federal Land Development Authority
FPSO	Floating Production Storage and Offloading
FSO	Floating Storage and Offloading
GDP	Gross Domestic Product
GLC	Government-Linked Corporation
HRDF	Human Resources Development Fund
HUC	Hook-Up and Commissioning
IA	Industry Association
IMP	Industrial Master Plan
IOC	International Oil Company
IP	Intellectual Property
IPO	Initial Public Offering
IRR	Internal Rate of Return
KETSA	Ministry of Water, Land and Natural Resources
MATRADE	Malaysia External Trade Development Corporation
MBOT	Malaysia Board of Technologists
MEDAC	Ministry of Entrepreneurship Development and Cooperatives
MIDA	Malaysia Industrial Development Authority
MIMOS	Malaysian Institute of Microelectronic Systems
MITI	Ministry of International Trade and Industry
MNC	Multinational Corporation
MOCA	Malaysia Offshore Contractors Association
MOF	Ministry of Finance
MOFA	Ministry of Foreign Affairs
MOGEC	Malaysian Oil & Gas Engineering Council
MOGSC	Malaysian Oil & Gas Services Council
MOHE	Ministry of Higher Education
MOHR	Ministry of Human Resources
MOSTI	Ministry of Science, Technology & Innovation
MOT	Ministry of Transport
MOU	Memorandum of Understanding
MOSVA	Malaysia Offshore Vessel Association
MPRC	Malaysia Petroleum Resources Corporation

MPM	Malaysia Petroleum Management
MTDC	Malaysian Technology Development Corporation
NEP	National Energy Policy
NKEA	National Key Economic Areas
NOC	National Oil Company
NORWEP	Norwegian Energy Partners
NPD	Norwegian Petroleum Directorate
OCTG	Oil Country Tubular Goods
OECD	Organisation for Economic Cooperation and Development
OEM	Original Equipment Manufacturer
O&G	Oil and Gas
OGSE	Oil & Gas, Services and Equipment
OGTC	Oil & Gas Technology Centre
O&M	Operations and Maintenance
OPEC	Organisation of the Petroleum Exporting Countries
OSV	Offshore Support Vessels
PE	Private Equity
PENJANA	Pelan Jana Semula Ekonomi Negara (Plan to Stimulate the National Economy)
PETRONAS	Petroleum Nasional Berhad
PRIHATIN	Pelaksanaan Pakej Rangsangan Ekonomi Prihatin Rakyat (Execution of the Citizens' Welfare Economic Stimulation Package)
PSA	Petroleum Safety Authority
PSC	Petroleum Sharing Contracts
R&D	Research and Development
RMK-12	Rancangan Malaysia Ke-12 (12th Malaysia Plan)
SJPP	Syarikat Jaminan Pembiayaan Perniagaan
SME	Small and Medium-Sized Enterprise
SOGDC	Sabah Oil & Gas Development Corporation
SWEC	Standardised Work & Equipment Categories
TA	Turnaround
TMM	Topside Major Maintenance
TVET	Technical and Vocational Education and Training
UM	Universiti Malaya
UTM	Universiti Teknologi Malaysia
UN SDGs	United Nations Sustainable Development Goals
VC	Venture Capital
VDP	Vendor Development Program

**DEVELOPING A ROBUST,
RESILIENT AND GLOBALLY-
COMPETITIVE MALAYSIAN OGSE
SECTOR WHICH CONTRIBUTES TO
THE SUSTAINABLE DEVELOPMENT
OF NATIONAL PRIORITIES**