



Executive Summary

Building the foundations for a long-term development partnership The construction phase of the PNG LNG Project

I. A SHARED LEADERSHIP RESPONSIBILITY

Large-scale oil, gas and mining projects have a major impact on resource-rich countries and communities. This impact can be immensely positive or negative, depending on how these projects are developed, governed and implemented, and how resource revenues are managed. Natural resource projects have the potential to drive economic growth and more inclusive and sustained prosperity for a country's citizens, while also creating value for project partners and investors. Yet, poor management and governance of such projects can lead to increased macroeconomic instability, corruption, conflict and negative environmental and socio-economic impacts for host countries and communities as well as increased costs, delays and risks for project partners and investors. The opportunities and risks are particularly notable in situations where governance institutions, public sector delivery capacity, and local human capital and management capabilities are weak.¹ The core challenge for any government in developing its energy and mineral resources, and for the investors and project operators that it partners with, is to optimize benefits and shared value, while identifying, avoiding and mitigating project-related risks and costs.

Learning from the case of the PNG LNG Project

The Papua New Guinea Liquefied Natural Gas (PNG LNG) Project provides a germane example of the shared leadership responsibilities, risks and opportunities of developing a complex, integrated project in a challenging context. The Project involves a multi-faceted relationship between the PNG government and Esso Highlands Limited (EHL), the Project operator and a fully owned subsidiary of ExxonMobil, together with a variety of other stakeholders. It was approved by the PNG government in December 2009. Construction commenced in March 2010 and the Project is on schedule to start production in 2014, with a projected 30 year production life.

The Project is the largest capital investment and most complex engineering, construction and production venture undertaken in the country's history, ensuring intense scrutiny of its performance and impact by both supporters and critics. While there are larger and more technically sophisticated LNG projects elsewhere, few have been constructed in such a challenging context or with the potential to have such a substantial impact on the host country's economic growth and long-term development options.

PNG is one of the world's most biologically and linguistically diverse countries, with a dualistic economy and high levels of poverty and inequality. It has been an independent nation for less than 40 years. The country's leaders face the governance challenge of needing to strengthen institutions and infrastructure at all levels – national, provincial and local. They also need to diversify the economy and substantially raise incomes and living standards for the majority of citizens, over 80 percent of whom live in remote rural communities with largely subsistence livelihoods.

Objectives of the case study

The case study focuses on the first three years of Project construction from March 2010 to June 2013. It reviews some of the internal management systems, stakeholder engagement mechanisms and cross-sector partnerships through which the Project team is implementing international practices and standards within the realities and constraints of the PNG context. It aims to provide a broad overview of some of the practical approaches that EHL and its partners have taken to manage Project risks and to create shared value, and identifies three core findings and a set of underlying lessons. It is aimed primarily at students, practitioners and policy makers.

The case study recognizes that initial exploration work relating to the Project began over 33 years ago. Prior to government approval of the Project in December 2009, it also took several years for the public and private sector partners, funders and customers to negotiate ownership, financing, and sales and marketing agreements, and for the PNG government to negotiate benefit sharing agreements with relevant provincial and local governments and landowners according to PNG law. All of these processes have shaped the contractual, regulatory, political and socio-economic context within which construction is being undertaken. In certain cases they have also created a legacy of divergent expectations and disagreement on what constitutes a fair allocation of Project-related risks and benefits among various stakeholders. A number of research studies, impact assessments and community surveys analyzing these issues have been undertaken over the past decade and they provide useful background for this case study.²



II. OVERVIEW OF THE PNG LNG PROJECT

The four year construction phase of the PNG LNG Project is short relative to the overall expected Project life, but the manner in which it is being implemented is crucial to determining long-term commercial success as well as the contribution to local, regional and national development. This is clearly the case in terms of achieving the engineering and design specifications required for operational excellence, safety, productivity and efficiency once production commences. It is also essential for establishing locally relevant and internationally acceptable risk management standards and systems, implementing a strong local corporate culture, developing national content and human capital, strengthening domestic institutions, and building effective stakeholder relationships and trust.

A large-scale and integrated investment

A US\$19 billion capital investment, with the potential to double the country's GDP, the PNG LNG Project spans over 700 kilometers of some of the most rugged and bio-diverse terrain in the world. It has required the construction of gas production and processing facilities in PNG's remote Highlands region, onshore and offshore pipelines, liquefaction, storage and marine facilities near Port Moresby, and the building or reinforcement of major physical and communications support infrastructure. It has demanded extensive investments in human capital development covering a wide range of technical and managerial skills, as well as support for local suppliers, and efforts to help strengthen domestic institutions at the community, regional and national level. Over the projected 30 year life of the Project, it is forecast that more than 9 trillion cubic feet of gas will be produced and sold to four major customers supplying industrial and consumer markets in Asia.

Diverse partners and stakeholders

Project partners, financiers and contractors: The Project involves a diverse and complex set of relationships. At its core is the relationship between the PNG government and EHL. The Project also involves six other public and private co-venture partners representing a combination of domestic and foreign interests and over 20 public and commercial financial institutions that constitute the Lender Group. Eight multinational engineering, procurement and construction (EPC) contractors from seven different countries are working with EHL. They are required to meet EHL's safety, environmental and social standards, while also adhering to their own policies and standards in these areas.

Project area stakeholders: There are some 60,000 landowners living in the Project area in diverse clans representing 14 different language groups. There are also local and provincial governments spanning five politically and economically diverse Provinces and nine License Areas. All of these groups (landowners, provincial and local-level governments) are represented in the PNG LNG Project Benefit Sharing Agreements that have been negotiated by the national government per PNG law. Although neither EHL or the Project consortium are a party to these agreements, they have a strong interest in working with the government and others to ensure the agreements are transparently and fairly implemented.

Workforce: At the height of construction in late 2012, the workforce reached 21,220 people. Some 40 percent were PNG citizens, with a number of them entering the formal employment sector for the first time. Workforce safety and skills development have been a priority. As of June 2013, over 1,300 workers have graduated as Project Safety Champions and more than 13,000 workers had completed Project-provided training. The fulltime workforce, including expatriates and PNG staff, is projected to be 1,200 once the asset enters production. A priority for the government and other Project partners is to manage the employment and socio-economic implications of this transition by exploring other formal sector options for newly trained construction workers.

Local suppliers and enterprises: The Project has established an independently run Enterprise Centre that has interacted with some 15,200 entrepreneurs and provided business development support and accreditation for 1,500 local businesses to be registered as suppliers. The Project has also worked with two umbrella Landowner Companies representing landowners in the different Project areas. As of June 2013, the total in-country spend on local products and services was over PGK 9 billion (about US\$4 billion at the June 2013 exchange rate). By comparison, the total net official development assistance flows to PNG during the same period were less than US\$3 billion.³

Civil society: During the past three years, EHL has also engaged with more than 200 local, regional, national and international civil society organizations. These include research institutes and universities, business associations, faith groups, non-governmental organizations, and community-based networks, especially women's and youth groups. Engagement has ranged from informal meetings and formal consultation processes to training programs, partnership agreements, and the establishment of a community grievance mechanism.

This diverse ecosystem of Project stakeholders creates a dynamic and interactive set of checks and balances on performance, in addition to the regulatory environment. It also creates a community of existing and potential partners that can help to leverage resources, and to scale and sustain the development impact of the Project.

III. KEY MESSAGES AND LESSONS

The case study highlights three core messages and a series of underlying lessons or good practices demonstrated by the construction phase of the PNG LNG Project. None of the good practices are 'new' in the sense that most of them have become important elements of more responsible and inclusive extractive sector project management over the past two decades. However, being able to implement them effectively in an integrated and multi-dimensional manner within a highly challenging project setting is a daunting leadership challenge.

The three core messages and some of their underlying lessons and good practices are summarized below. All of these messages and lessons require ongoing commitment and leadership by the PNG LNG Project team and by the PNG government as the Project transitions from construction into its production phase. These findings and lessons are also relevant for most project operators, policy makers and civil society organizations involved in large-scale resource projects, especially in developing countries.

Message #1 COMMITMENT TO RIGOROUS RISK MANAGEMENT AND ACCOUNTABILITY IN PNG	Message #2 INVESTMENT IN NATIONAL CONTENT AND CAPACITY IN PNG	Message #3 ENGAGEMENT IN CROSS-SECTOR PARTNERSHIPS AND POLICY DIALOGUE IN PNG
<p>The case study illustrates the mutually reinforcing approaches the PNG LNG Project has taken in adapting <i>internal</i> corporate policies, standards, and risk management systems to local context and culture, while also applying and complying with <i>external</i> principles and standards, such as the IFC Performance Standards that have become integral to most large-scale project finance agreements, in addition to host country regulations. It also highlights some models and lessons for achieving more participatory and accountable community engagement, and the value of learning from and working with independent experts and organizations to ensure greater rigor in decision-making and credibility in monitoring performance.</p> <p>The disciplined implementation of international good practices to identify, avoid and mitigate Project-related risks and to measure and report publicly on performance is an essential foundation for building trust with key stakeholders, ensuring accountability, and achieving responsible and economically viable project development. It can be especially important in strengthening local regulatory frameworks and raising business standards where capacity or enforcement is weak.</p>	<p>The case study explores some of the ways in which the PNG LNG Project is enhancing local vocational and workforce skills; developing local suppliers and enterprises; strengthening the capacity of domestic non-governmental organizations, research institutes, public sector institutions, community-based organizations and community leaders; promoting women's empowerment; and supporting infrastructure development.</p> <p>Investment in local human capital, enterprise development and institutional capacity in host countries and communities is often essential for successful project construction. In addition to the public revenues that a project generates, it is also one of the most significant contributions a large-scale project can make to support longer-term development outcomes. Capital-intensive oil and gas projects do not create a large number of direct jobs once construction is completed, but through their core business operations and social investment programs they can play a valuable role in other aspects of building individual and institutional capacity.</p>	<p>One of the over-arching messages of the PNG LNG case study has been the importance of ongoing engagement and cooperation between EHL and its contractors, different government entities, community-based groups, NGOs, research institutions, other companies, financial institutions, international donor agencies, and the diplomatic community in PNG. In addition to the Project's community engagement strategy and activities, the case study highlights two other key aspects of stakeholder engagement and cooperation. First, the benefits of building a few strategic cross-sector partnerships, often with non-traditional allies in the public and non-profit sector. Second, the need to participate with other stakeholders in policy dialogues and collective efforts to support the PNG government in improving resource revenue management and the quality of development planning and delivery.</p> <p>Effective trust-based relationship management is as critical as effective technically driven construction management to ensuring that projects are developed in a manner that is responsible and economically viable. This is the case in all major projects, but especially so when an investment is as complex and challenging as PNG LNG, and where there are large gaps in governance, skills, resources and trust between different stakeholders.</p>

#1 COMMITMENT TO RIGOROUS RISK MANAGEMENT AND ACCOUNTABILITY IN PNG

The construction phase of the PNG LNG Project illustrates the advances that have been made over the past two decades by major project developers and contractors in identifying, avoiding and mitigating the socio-economic, environmental, human rights, and governance risks associated with developing large-scale projects, and in publicly disclosing performance. The following six areas offer lessons for responsible project development:

<p>1. Adapting internal corporate policies, standards and management systems</p>	<p>This is essential for managing project risks while also helping to raise the bar on local standards. It requires project managers and technical teams to have in-depth knowledge of globally tried and tested corporate frameworks and lessons gained from other projects, as well as the ability to adapt these to local operating conditions and to build context-specific execution paths and workflows that can be institutionalized and sustained overtime. Importantly, this necessitates building local capacity and a supportive corporate culture that can drive appropriate attitudes and behaviors among local employees at the day-to-day operational level. It requires the ability to develop not only new skillsets but also mindsets, and to identify and track both leading and lagging indicators to improve safety and other essential risk management practices. The case study illustrates some of the ways in which ExxonMobil's Operations Integrity Management System (OIMS) has been implemented in PNG. OIMS was developed in the 1990s to establish common, worldwide expectations and a shared culture of responsibility for addressing safety, security, health, environmental, and social risks in all aspects of the company's business. It sets out a framework for the development of social planning and related performance metrics that draws on international expertise and experience, but can be adapted to meet PNG's requirements and constraints.</p>
<p>2. Applying international voluntary principles and standards</p>	<p>Over the past two decades, the growth in international, multi-stakeholder voluntary principles and standards has provided an additional layer of risk management and due diligence requirements that can help to improve project performance and accountability. In addition to ExxonMobil's engagement with certain multi-stakeholder initiatives at a global level, EHL's approach in PNG sets performance standards that meet or exceed these international voluntary principles and what is required by PNG's national laws and regulations. It is also working with the government, other companies, donor agencies and NGOs to help build common national platforms to implement them within PNG more broadly. Examples include: the IFC Performance Standards; the Equator Principles; the Extractive Industries Transparency Initiative; the Voluntary Principles on Security and Human Rights; the UN Guiding Principles on Business and Human Rights; and industry-wide guidelines and technical standards in specific areas such as occupational health and safety, emergency preparedness, and water, biodiversity and waste management.</p>
<p>3. Undertaking systematic and participatory community engagement</p>	<p>The Project team integrates a number of different approaches to achieve its community engagement goals. These include regular communication and consultation processes, an independently monitored program to compensate, resettle and restore livelihoods for physically and economically displaced households, a mechanism to respond to community grievances, and a variety of community investment and capacity building initiatives to build local skills, enterprises, livelihood opportunities, and community organizations over the longer-term. In addition to taking an integrated approach that is consistent across the Project area, a key lesson and challenge has been to ensure participation of all relevant community stakeholders, including women and youth, which is particularly important and difficult in a context of serious gender inequality. Linked to this, the team has focused on building the capacities and capabilities of existing community organizations and local decision-making and conflict resolution structures, and on partnering with and helping to strengthen existing public and private institutions that are already serving and working with communities. EHL also retained the Environmental Law Centre, a locally-base community legal organization, to act as an independent advocate on behalf of displaced people and to ensure that they are fully informed about the resettlement process as well as their rights and obligations.</p>

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#1 COMMITMENT TO RIGOROUS RISK MANAGEMENT AND ACCOUNTABILITY IN PNG

<p>4. Establishing a community grievance mechanism</p>	<p>Even when community relations are reasonably good, there will always be unmet expectations and grievances, both real and perceived, related to large-scale projects. The PNG LNG Project has established a formal community grievance management process with dedicated resources to receive, respond to, track, monitor, resolve or refer to government, close and report on community grievances. It has structured the mechanism in accordance with IFC requirements and emerging best practices, and provides a regular 'Community Issues Status' report. Economic concerns relating to employment and business opportunities are by far the most common grievances, illustrating the ongoing challenge that capital intensive projects face in managing community expectations with respect to job creation. Other common grievances that have been recorded and addressed have related to land compensation and ownership, water access and quality, and social impacts of the Project on local culture, community health and safety.</p>
<p>5. Implementing a comprehensive biodiversity strategy</p>	<p>As a large project in an area of high biodiversity and conservation value, PNG LNG has to balance a number of expectations and challenges. First is the challenge of integrating environmental conservation with the need to support and sustain viable local livelihoods and cultural traditions. Second is the need to ensure that site-specific environmental risks are identified and mitigated and that project-level performance standards are met, while also supporting more comprehensive sustainable development plans for the broader watersheds and conservation areas in which the Project is located. This calls for both risk management and capacity building, and for both shorter-term, site-level or project-level risk mitigation solutions and longer-term regional and national conservation strategies. The Project's Biodiversity Strategy and Biodiversity Offset Delivery Plan, which is one of the first of its kind in PNG, illustrates some of these challenges and lessons. Based on extensive engagement with local and international NGOs and the PNG Department of Environment and Conservation, the Biodiversity Strategy applies an internationally recognized hierarchy of: identify, avoid, mitigate, offset. Core activities are being implemented in partnership with NGOs and government. They include on-the-ground conservation projects, support for national policy development, and capacity building to develop qualified and experienced professionals who can contribute directly to the program and also benefit the practice of conservation in PNG more broadly.</p>
<p>6. Facilitating independent advice, evaluation, monitoring and reporting</p>	<p>The Project team has recognized the growing importance of obtaining independent advice, evaluation, monitoring and disclosure in establishing reliable baselines and managing its environmental and socio-economic performance. Formal interventions by credible third-party experts or institutions can provide additional expertise to enhance the quality of internal risk management systems, standards and decision making, as well as help to build trust and legitimacy with stakeholders and to complement legal and regulatory oversight and lender requirements. In response to EHL's internal standards and to meet the Lender Group requirements, the Project has undertaken independent baseline studies and surveillance monitoring of key demographic, health, and environmental indicators to ensure that relevant risk management plans and community investment programs are evidence-based and data-driven. In addition to the company's own internal monitoring and quarterly public disclosure processes, the consulting firm D'Appolonia undertakes independent environmental and social compliance monitoring on behalf of the Lender Group. The Project team has also appointed technical advisory committees consisting of internal and external experts to advise on specific programs such as the Biodiversity Strategy and Community Health. Independent impact studies and community surveys by academic researchers and NGOs add an additional layer of oversight and disclosure on Project performance.</p>

#2 INVESTMENT IN NATIONAL CONTENT AND CAPACITY IN PNG

Lack of domestic capacity and capability at the level of both individuals and institutions as well as in physical and communications infrastructure is one of the major impediments to achieving more inclusive and sustained growth and creating jobs in PNG. Large-scale energy projects are capital intensive, and after the relatively short construction phase they do not create a substantial number of direct jobs relative to the large capital investments made and public revenues generated. They can, however, play a role in creating shared value through investing in and strengthening domestic human capital, enterprise development, infrastructure, and institutional capacity. The following six areas of investment offer lessons for all major resource projects:

<p>1. Investing in local workforce and skills development</p>	<p>Energy companies have valuable experience in developing the type of technical, vocational and managerial skills that are crucial not only for project construction and operations, but also for broader economic development. Furthermore, they need – and can help to build – skills and workplace competencies that span the full spectrum of expertise from the most basic skill sets to highly trained professionals and graduate engineers. To meet construction needs and national content requirements, EHL and its EPC contractors have invested in extensive on-the-job training programs, established several dedicated training centers, and supported the development of local instructors. Once construction is completed, the centers have the potential to be transferred to the government or to other private training providers to support ongoing vocational and technical training opportunities for PNG citizens. As of June 2013, the Project had delivered close to 1.9 million hours of workforce training and offered over 10,600 training activities, with over 10,000 PNG workers having completed Project-provided training courses.</p>
<p>2. Developing local suppliers and enterprises</p>	<p>To meet the requirements of PNG’s regulations and ExxonMobil’s own global National Content Strategy, the Project has created a comprehensive local supplier development program. It established an independent Enterprise Centre to drive the program, but structured it to be part of and managed by a well-established, trusted, and internationally accredited local training institution – the PNG Institute of Banking and Business Management (IBBM). The resources provided by EHL have enabled IBBM to strengthen its overall capacity and range of business support and training services in a manner that will help it to continue these services over the longer-term on an economically viable basis. The Project has also enabled IBBM to establish a rigorous business assessment service, through which local companies can be evaluated and mentored to improve their ability to meet the quality requirements of large-scale projects and multinational customers. Linked to this has been the establishment of a PNG supplier database, which will make it easier in future for qualified suppliers to be connected to other projects and potential customers. Efforts have also been made through the Enterprise Centre and EHL’s own business development team to help Landowner Companies to strengthen not only their business capabilities, but also their governance structures, with the aim of helping them to achieve longer-term viability and to find other business opportunities once the Project construction phase is completed.</p>
<p>3. Building the capability and resilience of communities and households</p>	<p>In addition to avoiding and mitigating project-related risks, the Land and Community Affairs team has worked with communities, households and individuals in the Project area to proactively help them build their long-term capability and resilience for sustainable development. The team identified three priority areas for community investment: strengthening social resilience and ability to organize at the community level; local economic development projects; and community capacity building. Lessons learned include the value of working with and through existing institutions and strengthening or scaling their capacity, rather than setting up parallel structures. The Project has supported individual community members, including women and youth, to participate in Personal Viability Training (PVT). This is a locally-developed and led program that is intended to empower communities to drive their own development and help individuals manage their changing lifestyles through helping them develop their skills and capabilities in managing household finances and running businesses. PVT has now been delivered to over 1,300 people, along with a variety of other business, agricultural training and nutrition and health programs. Facilitating genuine participation and capacity building is an approach that takes considerable time, patience and sustained effort, but can help to build the foundation for longer-term development.</p>

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#2 INVESTMENT IN NATIONAL CONTENT AND CAPACITY IN PNG

<p>4. Promoting women’s empowerment</p>	<p>Severe gender inequality in PNG is a serious impediment to development, retarding inclusive growth, undermining human capital development, increasing demographic burdens, and perpetuating various behaviors that are highly problematic, including high levels of gender-based violence. One of the most important contributions that project operators can make is to be very explicit, visible and committed to supporting women’s empowerment through their own operations as well as their community investment programs and public policy dialogue. EHL has undertaken a number of actions to directly support this agenda. The company aims to serve as a corporate role model for women’s leadership and employment in the formal workforce. Several of the Project’s most senior executives are women, as are key leaders in the Land and Community Affairs team. The company has also made explicit commitments to recruit and train more young women through its various vocational training and graduate programs. The Enterprise Centre and EHL’s business development teams have supported women-owned and managed businesses, and the Land and Community Affairs team integrate gender priorities into their activities, as well as directly supporting women’s groups and individual women leaders in the community. EHL has also supported public research and data collection at the national level, such as the first PNG Country Gender Assessment, and it has been a participant in the Women in the Extractives Industry Initiative, launched by the PNG Chamber of Mines and Petroleum and the World Bank. At the international level, ExxonMobil supports a Global Women in Management Initiative, and EHL has sponsored 17 outstanding women leaders from PNG to attend this program, most of whom have played a demonstrable leadership role after returning home.</p>
<p>5. Strengthening health systems</p>	<p>The PNG LNG Project has recognized that developing an integrated community health program can be valuable not only in identifying, avoiding and mitigating health and safety risks associated with the Project, but also in helping to improve community health outcomes more broadly, and in strengthening public and non-profit health delivery systems. A key lesson has been the use of independent research, data collection, monitoring and evaluation processes based on internationally ‘tried and tested’ good practices. For example, EHL has partnered with the PNG Institute for Medical Research (IMR) to scale up the use of the Integrated Health and Demographic Surveillance System to evaluate health, socio-economic and behavioral datasets at the household level in the Project area. It has also commissioned an independent Health Impact Assessment, and established a Scientific Advisory Board to guide its community health programs. As with the Project’s overall community engagement strategy, a priority has been placed on working with and strengthening existing health research and delivery organizations, and EHL has signed two strategic partnership agreements with IMR and with Population Services International. Another lesson has been the value of engaging local employees as peer educators, health ambassadors and community volunteers in their own communities.</p>
<p>6. Supporting infrastructure development</p>	<p>Large-scale projects, especially those located in remote and undeveloped regions of a country, can make a valuable contribution to reinforcing existing infrastructure or building new physical and communications infrastructure. In addition to supplementing limited public finances, the private contribution can include the application of world-class engineering and project management skills, and social and environmental risk management capabilities to enhance the quality, reliability and development impact of certain infrastructure projects. In the case of the PNG LNG Project, investments have included: the construction of new infrastructure dedicated to meet the Project’s own needs, such as two vocational training centers, the Hides waste management facility, and the Komo airfield (with the potential of these being transferred to government or other operators after construction is completed); participation in a consortium with the government and other partners to install a 750 km fiber optic cable along the length of the Project’s onshore and offshore pipelines; initiatives to support the PNG Department of Works to strengthen existing public infrastructure that is used by the general public as well as the Project, such as the 700 km Highlands Highway; and support for community-led projects to improve clinics and schools through the Project’s local content and community investment programs.</p>

#3 ENGAGEMENT IN CROSS-SECTOR PARTNERSHIPS AND POLICY DIALOGUE IN PNG

The PNG LNG Project team has engaged extensively in dialogue and worked in partnership with other organizations and across different sectors, both at the level of on-the-ground program delivery and at the level of public policy dialogue and agenda-setting. Cross-sector engagement activities have taken many forms and models – from informal, but regular dialogue between the Project and one or more of its stakeholders or groups of stakeholders, to the signing of formal Memoranda of Understanding (MoUs).

1. Building strategic partnerships to leverage and sustain results

Partnerships among the Project operator and different levels of government, non-governmental organizations, research institutes, and community-based groups have been an important tool in enhancing the Project's ability to improve its risk management performance and to create shared value. They are also helping the Project to build legitimacy and trust among stakeholders, leverage resources and learning more effectively, and achieve more sustained and scalable results than different actors could achieve on their own. In addition, they are helping to strengthen the capacity of existing domestic institutions, which helps to build long-term development potential and manage expectations in terms of the Project's own role. In addition to many one-off examples of collaboration, the Project has built a small number of strategic partnerships that have the potential to achieve more transformational change and longer-term impact. Examples of such partnerships include MoUs with the PNG Institute for Medical Research, the Mama Graun Conservation Trust, and the PNG Institute of Banking and Business Management. In most cases, the Project aims to contribute in-kind resources, such as business management and analytical skills, as well as funding to its key nonprofit and public sector partners.

2. Participating in policy dialogue to support the PNG government in strengthening revenue management, development planning and implementation

Over the next 30 years, the development impact of the PNG LNG Project will depend primarily on how transparently and effectively the PNG government collects, manages and distributes the substantial project revenues that will start to flow once production commences. In the case of revenue transparency, the PNG Chamber of Mines and Petroleum – representing most of PNG's mining and petroleum companies – together with the World Bank, the Asian Development Bank, members of the international diplomatic community and other donors and NGOs have encouraged the PNG government to join the Extractive Industries Transparency Initiative (EITI). The government formally submitted its application for EITI candidacy in December 2013. In line with ExxonMobil's support for EITI since its inception, EHL has engaged in many of the relevant dialogues and workshops, and participates in an interim multi-stakeholder group. The major resource companies, including EHL, have also participated in dialogues and facilitated government and donor efforts to explore different models for establishing a Sovereign Wealth Fund and other approaches to improve the macroeconomic management of natural resource revenues.

The effective implementation of the Benefit Sharing Agreements (BSAs) negotiated in 2009 by the government for the PNG LNG Project is another key challenge going forward. Although neither EHL or the Project consortium are a party to the BSAs, they recognize that if the process works well it will give local communities a greater sense of ownership in the Project and a vested interest in supporting future operations, and vice versa if the BSAs are not fairly and effectively implemented. In particular, efforts are needed to support government in addressing implementation challenges such as the need to: survey and identify *bona fide* landowners; develop appropriate and secure payment mechanisms and payment schedules to beneficiary households; ensure that women do not get further marginalized from decision-making and receiving payments; and increase the transparency and accountability for revenue transfers between national, provincial and district-levels of government.

While being careful not to become a substitute for government, private enterprises in PNG such as EHL are also engaging with policy makers on how to achieve more effective and affordable delivery of essential services such as education, health and nutrition, water and sanitation, energy, housing and technology. They are exploring a variety of different delivery models including market-based solutions, social enterprises, philanthropic foundations, nonprofit organizations and community-led initiatives. There is great potential for more collective business action and cooperation to support development priorities in PNG, especially in the areas of vocational training; women's empowerment; support for small and micro-enterprise development; and improved access to health and nutrition.

IV. CONCLUSION AND RECOMMENDATIONS

The PNG LNG Project is nearing completion of the construction phase and will commence production on schedule in 2014. This is a major milestone and achievement for the Project partners and for PNG. Not surprisingly with an investment of this magnitude and complexity being undertaken in such a challenging context, there are ongoing opportunities for improvement in many of the areas outlined in the case study. There have been some widely reported negative impacts from construction-related activities at both the operational and the macroeconomic level. These have included local-level grievances, work stoppages and conflicts, and some negative macroeconomic impacts on the country's non-resource tradable sector.

Despite these challenges, the Project team has resolved the majority of recorded community grievances and stayed on target for the overall construction schedule through effective re-sequencing work and disciplined project management. The Project has also demonstrated measurable results in terms of environmental and social risk management, as reported by the independent compliance consultant appointed by the Lender Group. In particular, the independent consultant has cited the Project's worker safety, occupational health, and waste management programs as being examples of "best" practice. In addition, the Project has made numerous investments in local human capital, enterprise development, community investment, infrastructure, and institutional capacity building. After three years of construction, the Project can point to significant achievements in managing shared risks, creating shared value and building a foundation for broader development.

The Project's long-term impact on economic growth and development will depend largely on how the government of PNG manages the substantial resource revenues that will start to flow once production commences. This will require government bodies at all levels to dramatically improve their track record on resource revenue management and broader development planning and delivery. At the same time, EHL and its contractors will continue to face a high level of scrutiny and expectations in terms of their ability to effectively engage with stakeholders, manage Project-related risks, ensure accountability, and optimize local benefits and opportunities. These will be important as the Project transitions from construction to production and then throughout the anticipated 30 years of operation and ultimately during the decommissioning phase.

As with many other resource-rich countries, PNG's track record for effective resource revenue management has been mixed over past decades. As such, the Project is a test not just of whether large-scale projects can be mutually beneficial under challenging conditions, but also whether the country has learned from previous mistakes that have been made in developing and governing its natural resources. There are reasons to be cautiously optimistic. These include improvements made by the PNG government in a number of areas over the past decade, such as greater fiscal discipline and commitment to revenue transparency, although well-documented challenges remain in the areas of revenue management, development planning and delivery. The growing number and effectiveness of multi-stakeholder dialogues and cross-sector partnerships is another reason to be optimistic. Robust dialogue and debate have long been a feature of PNG's society and culture, but more structured models of multi-stakeholder dialogue and partnerships are also emerging. They are being driven by a variety of public, private and civil society leaders, including the PNG LNG Project. They will remain essential to ensuring the longer-term success of the Project and its contribution to more inclusive and sustainable development in Papua New Guinea, as well as the development impact of the extractive sector more broadly.

The following recommendations draw on the experience and lessons of the PNG LNG Project to date, but are aimed to be relevant more broadly for project operators, contractors, governments, and development agencies around the world. They also remain highly relevant for PNG.

Almost all of these recommendations call for policy makers, corporate executives, and civil society leaders to operate in non-traditional ways, often working with non-traditional partners. Such approaches will be increasingly important to meet the business challenges, energy needs, and development imperatives of the future. The individuals and institutions that focus on the energy sector and on the risks and benefits of developing large-scale energy projects will play an increasingly vital leadership role in shaping the development prospects of resource-rich countries and communities. As Ban Ki-moon, the United Nations Secretary-General, has noted, "from job creation to economic development, from security concerns to the status of women, energy lies at the heart of all countries' core interests."⁴

RECOMMENDATIONS FOR PROJECT OPERATORS AND CONTRACTORS	
1. CONTINUOUSLY IMPROVE RISK MANAGEMENT, ACCOUNTABILITY AND LOCAL CONTENT DEVELOPMENT	
Continuously improve internal management systems to identify, avoid and mitigate risks	The core responsibility of project operators is to deliver projects safely, per specifications on budget and on schedule in a manner that avoids or mitigates project-related social, environmental, ethical and human rights risks to stakeholders. This requires implementation of corporate level policies and standards supported by operational-level management systems, training and incentive structures that embed the company’s commitment across the entire organization. It requires rigorous data collection and evidence-based processes to establish credible baselines and to identify and assess actual and potential risks and negative externalities, management plans to integrate these findings into operations and decision-making processes, and mechanisms for tracking, monitoring and reporting on performance.
Establish early and transparent community engagement processes and grievance mechanisms	Effective community engagement processes and mechanisms are essential for identifying and mitigating risks, building trust and legitimacy and responding to and remediating community grievances before they escalate into conflict. Useful guidelines on effective community engagement and grievance mechanisms are available through IFC’s CommDev program, IPIECA, ICMM and the Shift Project, among others.
Develop a strategy for building human capital and local content through core business activities and social investment	All major project operators should develop national or local content plans, which set explicit definitions and targets for how they can harness both their core business competencies and value chains and their social investment or philanthropic foundations to help build local human capital, promote women’s empowerment, support local enterprise development, invest in infrastructure, and help governments and other development partners to strengthen institutional capacity in their host countries and communities.
Report publicly on progress and allow independent monitoring and evaluation	In addition to corporate-level corporate citizenship or sustainability reports, there will be increasing pressure on large companies to be more transparent in disclosing their socio-economic, environmental and human rights performance at a country level or even project level. The use of independent monitoring and/or assurance and verification can add further legitimacy and credibility to this process. An example of such reporting is the approach taken by the PNG LNG Project – in accordance with the loan requirements stipulated by the Lender Group – of producing a quarterly report itself, in addition to facilitating regular environmental and social compliance monitoring by an independent third-party appointed by the project lenders. This is becoming increasingly standard practice in major projects, but can be especially valuable in situations where public transparency and corporate disclosure are still relatively weak.
2. PARTNER WITH HOST GOVERNMENTS AND OTHER STAKEHOLDERS TO ENHANCE DEVELOPMENT PLANNING AND OUTCOMES	
Invest in strategic development partnerships	There is enormous potential for project operators to identify a small number of strategic partners to help them leverage resources, increase legitimacy, scale impact, and improve development outcomes in programs that are strategically important to achieving the company’s risk management and shared value objectives. These partners can range from NGOs to donor agencies and public entities. They can also include business-to-business partnerships. Oil, gas and mining companies, for example, could explore partnering with information technology and mobile banking companies or with healthcare and agribusiness companies to be more effective in implementing their community investment and regional development projects.
Participate actively in multi-stakeholder platforms and collective action	Large-scale project operators should play an active and transparent role participating in country-level multi-stakeholder platforms, public policy dialogues and government advisory councils so that they can improve the broader enabling environment for both business and more inclusive and sustainable development. Where relevant, they should be advocates for the national implementation of global principles and standards such as the Extractive Industries Transparency Initiative; the Voluntary Principles on Security and Human Rights; the UN Guiding Principles on Business and Human Rights; and relevant industry-wide guidelines and technical standards on key social, environmental and ethical issues.
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RECOMMENDATIONS FOR PROJECT OPERATORS AND CONTRACTORS *continued*

3. DEVELOP MULTI-DISCIPLINARY LEADERSHIP SKILLS

Train future leaders in all sectors who have a holistic view of how the private sector fits into and impacts a country's development agenda

There is a growing need for engineers to also understand development challenges, for business leaders to be more politically savvy, and for financial executives to integrate non-financial risks and opportunities into their analysis and decision-making. Increasingly, large companies operating in complex industries and in challenging environments need cross-boundary leaders who are comfortable operating not only across cultural and national boundaries, but also across different sector and functional boundaries. Efforts should be made to identify and train such leaders at the corporate, country and project-level. In addition, by setting high standards of competency and professional conduct, companies can nurture the development of host government, local business and civil society leaders who can then more effectively articulate and implement a sound vision and strategy for inclusive and sustainable development.

RECOMMENDATIONS FOR GOVERNMENTS AND DONOR AGENCIES

1. STRENGTHEN RESOURCE REVENUE MANAGEMENT

Take a comprehensive approach to improve resource revenue management at the national, regional and local level

The core responsibility of governments in resource-rich countries is to create an enabling environment for rule of law, sound macroeconomic policies, and anti-corruption efforts broadly, and effective oil, gas and mining legislation, inclusive benefit sharing agreements, and transparent, effective and accountable resource revenue management more specifically. Resource-rich governments should set ambitious goals to improve revenue resource management and report publicly on progress, starting at the national level, but also focusing on regional and local government. In addition to adhering to their international legal obligations (including under human rights treaties and anti-corruption conventions they have ratified), governments should also make explicit public commitments to adhere to relevant international voluntary principles and standards. Examples include the Extractive Industries Transparency Initiative, the Voluntary Principles for Security and Human Rights, and the UN Guiding Principles on Business and Human Rights.

Work with donor agencies and NGOs to build knowledge and capacity

Donor agencies and research and training institutions can do more to support governments in building their analytical and management capacity to improve resource governance. Useful guidelines and benchmarks are available through initiatives such as the Natural Resource Charter, the Resource Governance Index and Revenue Watch, the Chatham House project on oil governance, and the Norwegian Government's Oil for Development Initiative.

2. WORK WITH THE PRIVATE SECTOR TO IMPROVE DEVELOPMENT OUTCOMES

Support public-private partnerships targeted at specific development challenges

Governments and donors should create platforms and partnerships at a national or sector level that bring together leading companies, NGOs, foundations, research institutes and donors that have a shared interest in improved resource revenue management and/or better development planning and execution. The creation of multi-stakeholder structures in some countries to shape and implement the Extractive Industries Transparency Initiative offers a useful model. In a growing number of countries, there are also public-private partnerships focused on tackling specific development challenges such as vocational training; women's empowerment; support for small and micro-enterprise development; access to education; improved access to health and nutrition; and anti-corruption efforts. Project operators often need to invest significantly in these areas upfront, but should have plans in place from the outset to work closely with and to build the capacity of host governments and other domestic partners to deliver over the longer term.

Promote gender equality in the extractive sector

There is growing evidence that greater gender equality is essential for tackling some of the negative social and economic impacts of large-scale projects, and for driving more inclusive and sustainable growth more broadly. Governments should partner with companies and business associations in the extractive sector, and with donors and NGOs that have experience and programs in this area (such as the World Bank, the Australian, Canadian and Norwegian bilateral development agencies, regional development banks, Oxfam and CARE) to support research and projects aimed at improving women's empowerment, including access to education and livelihood opportunities.

METHODOLOGY AND ACKNOWLEDGEMENTS

The case study was written by Jane Nelson and Kara Valikai, from the Corporate Social Responsibility Initiative at Harvard Kennedy School. Their research was based on a site-visit to Papua New Guinea in September 2012, hosted by EHL; in-person and telephone-based interviews with stakeholders in government, non-governmental organizations, community groups, business associations, and the donor and diplomatic community; interviews with and presentations from business executives, project managers and functional experts in EHL and ExxonMobil; and a literature review of commissioned and independent studies related to the PNG LNG Project directly and of other reports on responsible large-scale project development more broadly. The full case study is available on www.hks.harvard.edu/m-rcbg/CSRI/

The authors are grateful to the numerous people in Papua New Guinea and internationally, in government, business, academia, donor agencies, and civil society, and from ExxonMobil, who have generously shared their insights, experiences and time as we have researched and written this paper. We are especially grateful to Peter Graham, Managing Director of Esso Highlands Limited, ExxonMobil's affiliate in PNG, and his team, who hosted our field visit to PNG and provided information referenced in the report. We would also like to acknowledge the support and feedback of our colleagues at Harvard Kennedy School, especially John Ruggie, Scott Leland, Marli Porth, Peter Harrington, Beth Jenkins, Jennifer Nash, David Plumb, and Alison Beanland.

ENDNOTES

1. There is an extensive literature on the risks and opportunities associated with large-scale extractive projects, including research on the Resource Curse and Dutch Disease. Useful references include: Ross, Michael. *The Oil Curse: How Petroleum Wealth Shapes the Development of Nations*. Princeton University Press, 2012; Collier, Paul. *The Plundered Planet: Why We Must – and How We Can – Manage Nature for Global Prosperity*. Oxford University Press, 2010. There are also a number of dedicated resource governance and extractive industry initiatives based in universities, think-tanks, nonprofit organizations and international development agencies. They include initiatives at the World Bank Group, Chatham House, the Revenue Watch Institute, the Natural Resource Charter, Oxfam, and Publish What You Pay.
2. Studies on the socio-economic impact to-date of the PNG LNG Project include the following – some of which emphasize the positive impact and potential of the Project and others of which highlight real and perceived risks and costs of the Project: *PNG LNG Economic Impact Case Study: An assessment of the direct and indirect impacts of the proposed PNG LNG Project on the economy of Papua New Guinea*. ACIL Tasman Pty Ltd, February 6, 2008; Dixon, Peter B., Gae Kauzi and Maureen T. Rimmer. *Effects on the PNG Economy of a Major LNG Project*. The Economic Society of Australia, 2010; *Listening to the Impacts of the PNG LNG Project*. Oxfam Australia, November 2011; *The Community Good: Examining the Influence of the PNG LNG Project in the Hela Region of Papua New Guinea*. Child Fund Australia, the National Centre for Peace and Conflict Studies at the University of Otago, Jubilee Australia, the Oxfam Highlands Programme, the Melanesian Institute, and the PNG Church Partnership Programme, May 2012; *Pipe Dreams: The PNG LNG Project and the Future Hopes of a Nation*. Jubilee Australia Research Centre, December 2012.
3. The total net Official Development Assistance (foreign aid) disbursed to PNG during 2012 (the most recent year for which public data is available) was US\$664.84 million. During 2011 it was US\$610.99 million, and during 2010 it was US\$511.41 million. For further details see: <http://stats.oecd.org/qwids/#?x=2&y=6&f=3:51,4:1,1:1,5:3,7:1&q=3:51+4:1+1:1+5:3+7:1+2:136+6:2007,2008,2009,2010,2011,2012>
4. A Vision Statement by Ban Ki-moon, Secretary-General of the United Nations: Sustainable Energy for All. The United Nations, November 2011.