

## **Assessing the Demonstration Effects of EAIF and GuarantCo Transactions on Infrastructure Finance Markets**

PIDG Independent Study

PIDG Summary and Response

## **PIDG Independent Study:**

### **Assessing the Demonstration Effects of EAIF and GuarantCo Transactions on Infrastructure Finance Markets**

The Private Infrastructure Development Group's (PIDG) purpose is to combat poverty in the poorest and most fragile countries through pioneering infrastructure to help economies grow and change people's lives. .

Measurement of PIDG's development impact is integral to this in two ways:

#### **1. Accountability**

PIDG must provide robust evidence to account for and justify the use of public funding. In this, PIDG is accountable to its Owners, host Governments, and the communities it seeks to serve.

#### **2. Learning, improving and demonstrating**

Impact measurement provides PIDG with data that can be used to improve performance and guide our strategy. Sharing knowledge with the wider market also supports PIDG's work to crowd in more investment and promote effective models for infrastructure in low-income countries.

We view independent reviews and evaluations as particularly important tools for accountability and learning. Independent reviews are intended to provide PIDG, our Owners, and other stakeholders with a fresh and objective view on areas of critical importance to PIDG's strategy for delivering positive impact. Independent reviews are advisory, and do not represent PIDG policy, strategy or results reporting.

PIDG seeks to demonstrate commercially viable and cost-effective models for infrastructure in some of the lowest-income countries. Demonstration effects, leading to more private sector investment, are central to PIDG's strategic aims for projects to achieve scale and replication.

In 2018 Lion's Head Global Partners (LHGP) conducted an independent assessment of the demonstration effects of PIDG's two largest companies, EAIF and GuarantCo. This included three case studies of projects, asking:

#### ***Are we a step closer to a similar transaction happening without the need for PIDG's involvement?***

Case study projects were selected by LHGP using criterion-based sampling to ensure case studies were able to provide a valid representation of EAIF and GuarantCo's portfolio.

#### **Selected conclusions and recommendations**

The GuarantCo-supported hydropower project Lower Solu (Nepal, 2014) increased familiarity among banks with larger hydro projects in the country, improved understanding of international ESG requirements and raised interest among international private lenders and DFIs for Nepal. Lower Solu has also contributed to growth in the pipeline of local projects that could be guaranteed, including at significantly lower levels of guarantee coverage.

GuarantCo's SA Taxi guarantee (South Africa, 2010-2015) resulted in a full replication without GuarantCo participation and the repetitive use of standardised loan agreements.

The EAIIF-supported IHS Eurobond (Nigeria, 2016) contributed to further issuances by comparable firms, and increased familiarity amongst investors with telecoms in sub-Saharan Africa. IHS also had a positive effect on comparable firms' appetite and ability to issue Eurobonds. Market stakeholders also indicated that a bond was more effective in stimulating local market interest than a loan.

#### **PIDG Development Impact comment on the report**

Demonstration effects of PIDG projects are difficult to quantify reliably. Market data in PIDG priority countries is scarce. Assessments rely on anecdotal evidence and local market perceptions. Furthermore, there are few research consultancies that are able to access and interpret the right sources of market information and conduct evaluations in line with aid sector good practice.

While we can't quantify or rate the market-level effects of PIDG transactions for comparison, this study provides a clear validation of the demonstration effects of three projects, as an indicative sample of EAIIF and GuarantCo's portfolios.

Given the challenges and limitations of this form of assessment, we do not expect to extend studies across a large sample of the PIDG portfolio.

PIDG will instead use this report as a basis for supporting the screening and ex ante assessment of new projects where the development impact case is based on establishing models for replication or local market building. We will also schedule further in-depth market studies on a small sample of PIDG transactions as part of our rolling annual evaluation plan. This includes a longitudinal study of the market effects of InfraCredit Nigeria, conducted in partnership with DFID's Infrastructure and Cities for Economic Development programme, which will report in 2019.



Assessing the  
Demonstration Effects of  
EAIF and GuarantCo  
Transactions on  
Infrastructure Finance  
Markets

Final Report

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## Table of Contents

<b>1 EXECUTIVE SUMMARY .....</b>	<b>5</b>
<b>2 INTRODUCTION .....</b>	<b>6</b>
2.1 BACKGROUND AND OBJECTIVE OF THE ASSIGNMENT .....	6
<b>3 METHODOLOGY .....</b>	<b>8</b>
3.1 DEFINING DEMONSTRATION EFFECTS .....	8
3.2 MEASURING DEMONSTRATION EFFECTS .....	11
3.3 CASE STUDY SELECTION PROCESS .....	14
3.4 DATA COLLECTION.....	16
<b>4 CASE STUDY 1: GUARANTCO – LOWER SOLU, NEPAL .....</b>	<b>19</b>
4.1 PROJECT BACKGROUND.....	19
4.2 DESCRIPTION OF THE TRANSACTION.....	19
4.3 EXPECTED DEMONSTRATION EFFECTS.....	22
4.4 DATA ANALYSIS .....	23
4.5 SUMMARY OF DEMONSTRATION EFFECTS .....	33
4.6 CONCLUSION .....	35
<b>5 CASE STUDY 2: EAIF – IHS, NIGERIA .....</b>	<b>36</b>
5.1 PROJECT BACKGROUND.....	36
5.2 DESCRIPTION OF THE TRANSACTION.....	36
5.3 EXPECTED DEMONSTRATION EFFECTS.....	39
5.4 DATA ANALYSIS .....	39
5.5 SUMMARY OF DEMONSTRATION EFFECTS .....	45
5.6 CONCLUSIONS.....	48
<b>6 CASE STUDY 3: GUARANTCO - SA TAXI, SOUTH AFRICA.....</b>	<b>49</b>
6.1 PROJECT BACKGROUND.....	49
6.2 DESCRIPTION OF THE TRANSACTION.....	49
6.3 EXPECTED DEMONSTRATION EFFECTS.....	51
6.4 SUMMARY OF DEMONSTRATION EFFECTS .....	54
6.5 CONCLUSIONS.....	56
<b>ANNEX.....</b>	<b>57</b>

**List of Tables**

TABLE 1 INTERVIEWEE TYPES\* ..... 17

TABLE 2 STAKEHOLDER TABLE ..... 20

TABLE 3 EXPECTED GENERAL DEMONSTRATION EFFECTS ..... 22

TABLE 4 EXPECTED DEMONSTRATION EFFECTS SPECIFIC TO GUARANTCO ..... 22

TABLE 5 REALISED DEMONSTRATION EFFECTS ..... 24

TABLE 6 UN-REALISED DEMONSTRATION EFFECTS..... 30

TABLE 7 NOTABLE TRANSACTIONS SINCE LOWER SOLU ..... 32

TABLE 8 IHS AND HTA BOND COMPARISON..... 39

**List of Figures**

FIGURE 1 TYPES OF EFFECTS ARISING FROM A TRANSACTION ..... 8

FIGURE 2 STEPWISE DEVELOPMENT AND THE GRADUAL EFFECTS OF DEMONSTRATION ..... 9

FIGURE 3 PATHWAY TO DEMONSTRATION EFFECTS..... 12

FIGURE 4 QUALITY OF DEMONSTRATION EFFECTS WATERFALL APPROACH..... 13

FIGURE 5 PROCESS FOR CASE STUDY SELECTION ..... 15

FIGURE 6 CASE STUDY SHORTLIST..... 16

FIGURE 7 ECL - PATHWAYS TO DEMONSTRATION EFFECTS..... 34

FIGURE 8 IHS NIGERIA - PATHWAY TO DEMONSTRATION EFFECTS..... 47

FIGURE 9 SA TAXI - PATHWAY TO DEMONSTRATION EFFECTS..... 54

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## Acronyms

ADF	African Development Fund
AfDB	African Development Bank
ALN	African Leaders for Nutrition
BIO	Belgian Investment Company for Developing countries
BMZ	German Federal Ministry for Economic Cooperation and Development
BMGF	Bill & Melinda Gates Foundation
CDC	Commonwealth Development Corporation, UK development finance institution
DEG	German Investment and Development Corporation
DOED	Department of Electricity Development
EAIF	Emerging Africa Infrastructure Fund
ECS	Essel Clean Solu (Project Development Company of Lower Solu)
ESG	Environmental, Social and Governance
FMO	Dutch Development Bank
HIDCL	Hydroelectricity Investment and Development Company
IPP	Independent Power Producer
KDB	Korea Development Bank
LCY	Local Currency
LS	Lower Solu (Project Developed by ECS)
NEA	Nepal Electricity Authority
NPR	Nepalese Rupee
NRB	Central Bank of Nepal (Nepal Rastra Bank)
OFID	OPEC Fund for International Development
OPIC	Overseas Private Investment Corporation
PIDG	Private Infrastructure Development Group
PPP	Public Private Partnership
ROR	Run-of-the-river
RSA	Republic of South Africa

## 1 EXECUTIVE SUMMARY

This report summarizes a study of the demonstration effects resulting from three transactions supported by the PIDG companies GuarantCo and the Emerging Africa Infrastructure Fund (EAIF). The analysis includes a detailed study of a hydropower sector transaction carried out by GuarantCo in Nepal where GuarantCo provided a guarantee to local lenders and a high-level analysis of its guarantees for SA Taxi, a South African integrated lending firm. For EAIF, the case study is on its anchor investment in the IHS Eurobond issuance in 2016. Projects were selected for case study by LHGP in consultation with PIDG stakeholders. Criterion based sampling was chosen over random sampling to ensure case studies were able to provide both a valid representation of EAIF and GuarantCo's portfolios, and clear assessments based on reliable and accessible market information.

For the purpose of this study we consider a demonstration effect to have occurred when we can answer positively the following question: are we a step closer to a similar transaction happening without the need for PIDG's involvement? The assessment takes into consideration whether the demonstration effects found are those outlined in each company's Theory of Change<sup>1</sup> and whether these effects are generally broadly in line with the company's desired outcomes.

### Key findings

The GuarantCo supported hydropower project Lower Solu was found to have increased familiarity among banks with larger hydro-projects in the country, improved understanding of ESG requirements of international lenders across the local market and raised interest among international private lenders and DFIs for the country and sector. Furthermore, market participants indicated growth in the pipeline of local projects that could be guaranteed, including at lower levels of guarantee coverage, since the transaction. While Lower Solu has contributed to this growth, changes in regulation are likely to be the main driver.

GuarantCo's SA Taxi guarantee resulted in a full replication without GuarantCo participation and the repetitive use of standardised loan agreements.

The EAIF supported IHS Eurobond contributed to further issuances by comparable firms, and increased familiarity with the sector and geography combination (Sub-Saharan Africa telecoms Infrastructure). There is considerable evidence to suggest that IHS had a positive effect on comparable firms' appetite and ability to issue Eurobonds. Feedback further suggests that the effect of a bond in stimulating local market interest is considerably greater than of a loan.

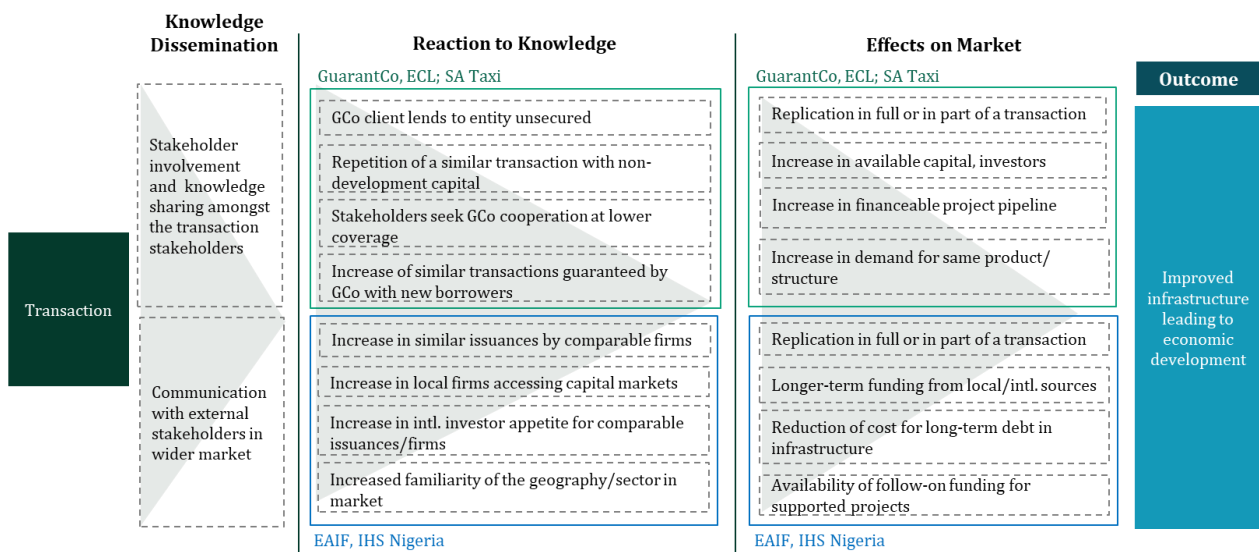
For each case study, the figure below serves as a guide to summarize whether and how the underlying transaction created change in behaviour or perception by market participants and what effects on the markets these changes imparted.

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<sup>1</sup> Entities which seek to have a developmental impact, such as the PIDG companies, usually operate under a framework or "Theory of Change" which lays out how the activities carried out by these companies will lead to the desired developmental outcomes. For example, in the case of EAIF and GuarantCo, the companies' Theories of Change include direct impact on the transaction they are supporting – e.g. providing additional funding for infrastructure, resulting in more infrastructure being built – but also broader impacts such as, in the case of GuarantCo, generating a larger pipeline of projects which are in local currency and thus can be guaranteed by the company.



Pathway to demonstration effects



2 INTRODUCTION

Lion’s Head Global Partners (Lion’s Head or LHGP) was commissioned by PIDG to assess the demonstration effects of the activities of the Emerging Africa Infrastructure Fund (EAIF) and GuarantCo. The assessment presented in this report is based on three case studies, two of which are GuarantCo transactions and one a transaction by EAIF.

LHGP developed an assessment methodology, which included frameworks for case study selection, case study design, data collection, and the case study analysis itself.

In addition to presenting the results of each case study, this report:

- Outlines the objectives of the mandate, and summarises scope of work and tasks performed;
- Articulates the definition of demonstration effects used for the purposes of this assessment;
- Outlines methods applied for case study selection and present the methodology used to assess each case study, and the ex-ante results expected for each; and
- Describes the process of data collection and highlights bottlenecks and data gaps.

This final report is structured as follows:

- Section 2 presents the background and objectives of the assessment;
- Section 3 lays out the methodology, and data collection approaches;
- Section 4 presents the case study details and results for GuarantCo in Asia: Lower Solu, Nepal;
- Section 5 presents the case study details and results for EAIF: IHS, Nigeria;
- Section 6 presents the case study details and results for GuarantCo in Africa: SA Taxi, South Africa;
- Section 7 presents conclusions on the case study analysis and key take-aways going forward.

2.1 BACKGROUND AND OBJECTIVE OF THE ASSIGNMENT

Low- and middle-income countries across Africa and Asia have the world’s least developed and most outdated infrastructure. Recognising the developmental role infrastructure can play in these markets, and the significant hurdles present, PIDG was set up to provide financial, technical and strategic support to infrastructure projects and encourage private sector investment. PIDG encompasses six

distinct funding vehicles targeting specific hurdles present at different stages in the infrastructure project development, each with a mandate to support private sector participation through different instruments.

While the PIDG's upstream-focused companies, TAF, DevCo, InfraCo Africa and InfraCo Asia, provide financial products, technical assistance and grants for early-stage development through to financial close, EAIF and GuarantCo typically support more mature projects in need of construction funding. In this way, the PIDG looks to provide full "life-cycle" support to infrastructure projects.

Aside from direct funding and de-risking of projects, PIDG companies also provide support through capacity-building and the improvement of environmental and social standards. PIDG companies further have specific objectives beyond the immediate impact on a single transaction, whether it is increasing the tenor of available funding (EAIF) or enhancing capital markets' role in infrastructure funding (GuarantCo), which they aim to achieve through demonstration of viability.

In this assignment we analyse the demonstration effects that the PIDG companies EAIF and GuarantCo have had in the markets in which they operate. The assessment is based on case studies of specific transactions which received investments from either EAIF or GuarantCo, and further analyses the findings' relevance for the companies' respective Theories of Change.

The primary objectives of both entities are similar: execution of a successful transaction, co-financing by commercial funders, and increase in the number of infrastructure projects being developed and brought to completion in their target markets. While both seek to mobilise private sector investment for infrastructure, their specific approaches are very different: EAIF provides long-term debt for infrastructure projects in Africa, whilst GuarantCo provides local currency guarantees in Africa, MENA, South and South-East Asia.

Beyond immediate impact and additionality, both institutions also aim to have broader, systemic impact on the markets they operate in by demonstrating the viability of their transactions. For this mandate, we have defined demonstration effects as follows: **"A change in behaviour or perception amongst market participants that is (1) in reaction to a transaction with participation of EAIF and GuarantCo<sup>2</sup> and (2) leads to some form of replication"**. The rationale behind this definition is discussed further in Section 3 of this report. Whereas achieving demonstration effects is an objective for both, the demonstration effects of each company's involvement in a transaction will differ across the two – in line with each company's individual mandates.

For these companies to continue providing proof of viability of transaction to the broader market, it is important to understand the extent to which their activities to date have successfully catalysed a change in behaviour of other market participants, including other investors, local institutions and local government. To this end, the assessment focuses on case studies for each company, which have been analysed to identify demonstration effects that took place as a result of the transaction.

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<sup>2</sup> It is assumed that PIDG only participates in transactions that would not happen without PIDG support, we therefore focus our analysis on the effects of the transaction rather than the effects of the support provided.

### 3 METHODOLOGY

#### 3.1 DEFINING DEMONSTRATION EFFECTS

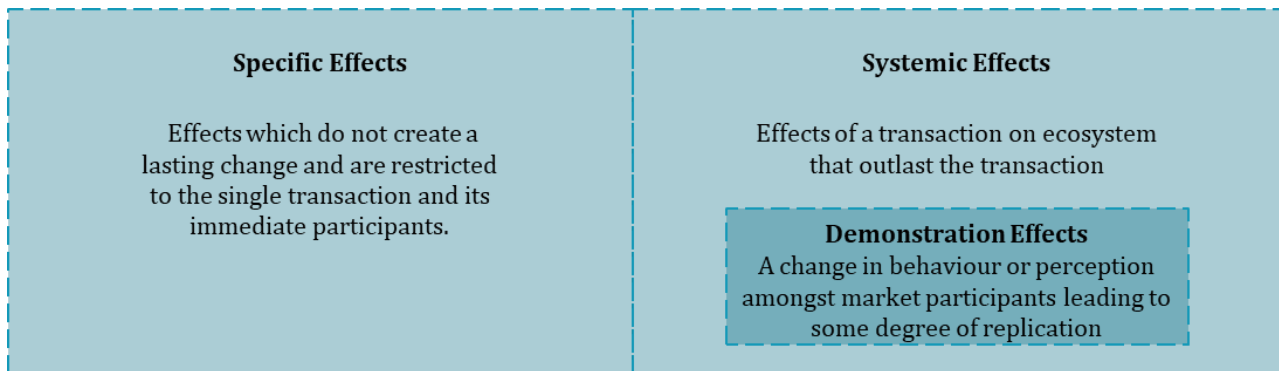
In order to assess demonstration effects stemming from EAIF and GuarantCo’s activities, we first defined general demonstration effects, and then applied these to each company’s activities and mandate in order to understand the sort of specific demonstration effects that we could expect that company to generate. This was then further refined to provide expected demonstration effects for each case study transaction.

Transactions can have specific effects and systemic effects:

**Specific effects** are those which do not create lasting change and their impact is restricted to the single transaction and its immediate participants. Participation by EAIF and GuarantCo in a transaction yields specific effects, for example: the provision of a guarantee by GuarantCo allows other investors to participate in that specific transaction – the specific effect here being the improvement of the issuer’s creditworthiness, which allows the successful raising of capital. Specific effects are conceptually aligned with additionality, i.e. these companies’ role in enabling a transaction where it would not have been successful without them.

**Systemic effects** are those that last over time and can be seen outside the single transaction’s group of stakeholders. Continuing with the example given above, if GuarantCo’s support allows investors to become more familiar with the credit profile of the issuer, or with the transaction structure, or to better understand the riskiness of the sector, leading to their future participation in a similar transaction (potentially requiring less support), then a systemic effect has been achieved. Demonstration effects are manifest beyond the specific transaction and hence are a sub-set of systemic effects.

Figure 1 Types of effects arising from a transaction

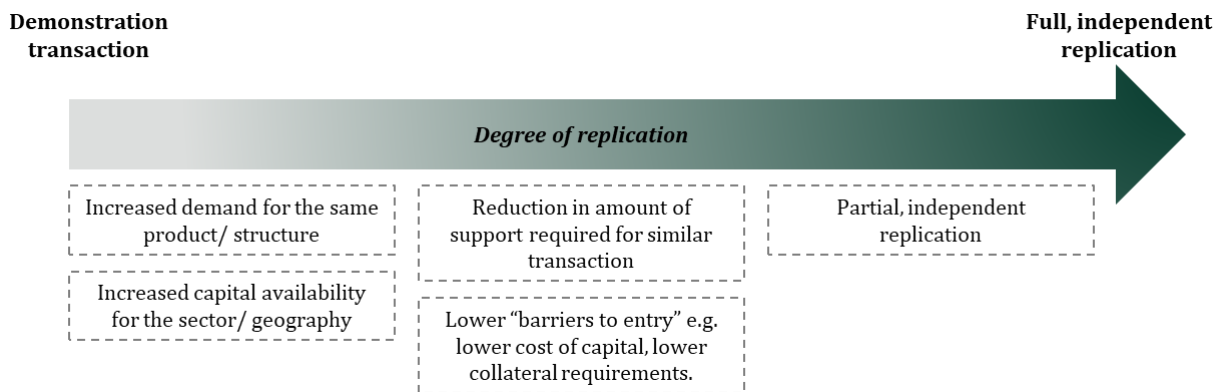


Whilst there is no universal definition of demonstration effects, most existing definitions are centred around the concept of independent replication of an activity whose viability has been demonstrated via a precedent. The IFC, for example, has used the following definition (amongst others) in the past: “led other market participants to change their behaviour, without IFC involvement”<sup>3</sup>. These definitions tend to focus on the existence of both behavioural change *and* replication as a result of the demonstration.

<sup>3</sup> DETERMINING THE “DEMONSTRATION EFFECTS” OF IFC’S OPERATIONS: A STUDY [https://www.ifc.org/wps/wcm/connect/22b43a004fb4c9caa6c3ee0098cb14b9/IFC\\_EvaluationReport\\_DemonstrationEffects.pdf?MOD=AJPERES](https://www.ifc.org/wps/wcm/connect/22b43a004fb4c9caa6c3ee0098cb14b9/IFC_EvaluationReport_DemonstrationEffects.pdf?MOD=AJPERES)

Whilst a good starting point, we believe this definition to be too restrictive, especially in the context of EAIF’s and GuarantCo’s activities. For instance, in the case of capital markets, it is rare that one example alone leads to the opening of a market or the immediate uptake of an activity by other market participants. Capital markets develop in a step-wise fashion, thus the intermediate steps between a demonstration “event” and full independent replication should also be counted as the effects of the demonstration:

Figure 2 Stepwise development and the gradual effects of demonstration



Taking this into account, the definition of demonstration effects applied for this mandate, is as follows: **“A change in behaviour or perception amongst market participants that is (1) in reaction to a transaction with participation from EAIF and GuarantCo<sup>4</sup> and (2) leads to some form of replication”**. In layman’s terms we can say that there have been demonstration effects in a situation where we can answer positively to the following question “Are we a step closer to a similar transaction happening without the need for PIDG’s involvement?”

This broader definition of demonstration effects is more aligned with the impacts targeted by EAIF and GuarantCo. It is also more sensitive to the context within which these companies operate.

**3.1.1 EAIF DEMONSTRATION EFFECTS**

A stated objective of EAIF is that it should demonstrate the viability of long-term lending for infrastructure in Sub-Saharan Africa on commercial terms, i.e. have a demonstration effect on other market participants<sup>5</sup>.

<sup>4</sup> It is assumed that PIDG only participates in transactions that would not happen without PIDG support, we therefore focus our analysis on the effects of the transaction rather than the effects of the support provided.

<sup>5</sup> Emerging Africa Infrastructure Fund Progress Review 2004, PIDG

**EAIF**

**Objective:** EAIF was created to address the funding gap in the availability of long-term debt finance for private sector-led infrastructure projects in Sub-Saharan Africa (SSA), and to demonstrate that lending to such projects can be done on commercial terms. Where possible, EAIF also looks to mobilise local capital markets. By proving the viability of such projects and financing structures, EAIF aims to directly and indirectly (through demonstration effects) increase the availability of funding (international and local) for infrastructure in SSA.

**Instruments:** EAIF primarily looks to provide long-term senior debt to projects in hard currency, however it has access to a broader range of products for the support of the sector:

- Project loans and corporate loans of between USD 10 million and USD 50 million
- Senior debt
- Subordinated and/or mezzanine debt Loans in USD or €, loan periods of up to 20 years
- Local currency loans possible in certain circumstances
- Anchor or cornerstone investor in bond issues
- Bridging finance<sup>6,7</sup>.

In addition, EAIF can provide viability, technical and environmental grant support to qualifying projects and introduce clients to other PIDG companies.

**Market:** all 47 economies in Sub-Sahara Africa are eligible for EAIF. For any investments into projects in South Africa, EAIF must demonstrate to the PIDG that investments are limited to projects that focus on the poorest regions and groups

The specific kind of demonstration effects we would expect from a successful EAIF transaction might include:

- Emergence of longer term funding availability from either local or international sources for infrastructure investment, in either hard or local currency;
- Reduction in the cost of long-term debt for infrastructure projects;
- Increase in PPP/IPP deal-flow within a particular geography and/or sector in the wake of a successful transaction;
- Availability of follow-on funding for projects supported;

### 3.1.2 GUARANTCO DEMONSTRATION EFFECTS

GuarantCo's mandate is much more focused on the development of local capital markets and enhancing the role of local currency funding in infrastructure finance in developing markets.

<sup>6</sup> <http://www.eaif.com/what-we-do/loan-products/>

<sup>7</sup> Emerging Africa Infrastructure Fund Progress Review 2009

**GUARANTCO**

**Objective:** GuarantCo seeks to increase the availability of local currency capital and enhance the role it plays in infrastructure finance in developing markets, whilst also supporting local capital market development – with the ultimate goal of facilitating economic growth and thus poverty reduction. At the transaction level GuarantCo helps increase the amount and the tenor of funding available and increase the availability of this funding in local currency, by improving the credit profile of the issuer/project through a guarantee.

**Instruments:** GuarantCo primarily operates through the provision of guarantees on debt

- A guarantee cover for any single transaction is between USD 5 million to US 50 million or the equivalent amount in local currency;
- GuarantCo will not typically cover more than 50% of the total debt;
- Coverage can be provided for senior and subordinated debt (but not equity);
- Maximum tenor is 15 years;
- Types of guarantees GuarantCo can provide:
  - Partial credit and partial risk guarantees;
  - First loss guarantees;
  - Tenor extension;
  - Liquidity guarantees;
  - Joint guarantees or counter guarantees.

**Market:** GuarantCo is able to support projects in all low income and lower middle income countries in Africa, MENA, Asia, Latin and Central America and the Caribbean, as listed in columns I, II and III on the “DAC List of ODA Recipients”<sup>8</sup>.

In the case of GuarantCo, the company’s own Theory of Change explicitly states target outcomes resulting from demonstrations of viability. These include:

- Increase in the pipeline of infrastructure projects which GuarantCo can play a guarantor role in;
- Increase in the availability of local currency funding for infrastructure projects;
- Increased commitments by GuarantCo clients to do similar deals again in local currency;
- Increase in the role played by capital markets in infrastructure funding.

### 3.2 MEASURING DEMONSTRATION EFFECTS

Whilst we cannot measure or assess the demonstrative “strength” of the transaction itself, we can infer that there have been demonstration effects by assessing whether any of the outcomes listed above have taken place. To this end we define the demonstration effect “pathway” as follows:

**Demonstration:** this can be any successful transaction which showcases viability of a new activity/approach/structure within certain parameters – i.e. sets a precedent;

**Knowledge Dissemination:** through participating in a demonstrative transaction or witnessing its outcome, market stakeholders increase their experience and/or understanding of the sector;

**Reaction to Knowledge:** Based on the acquired insights and/or experiences, market participants change their behaviour and/or investment decisions

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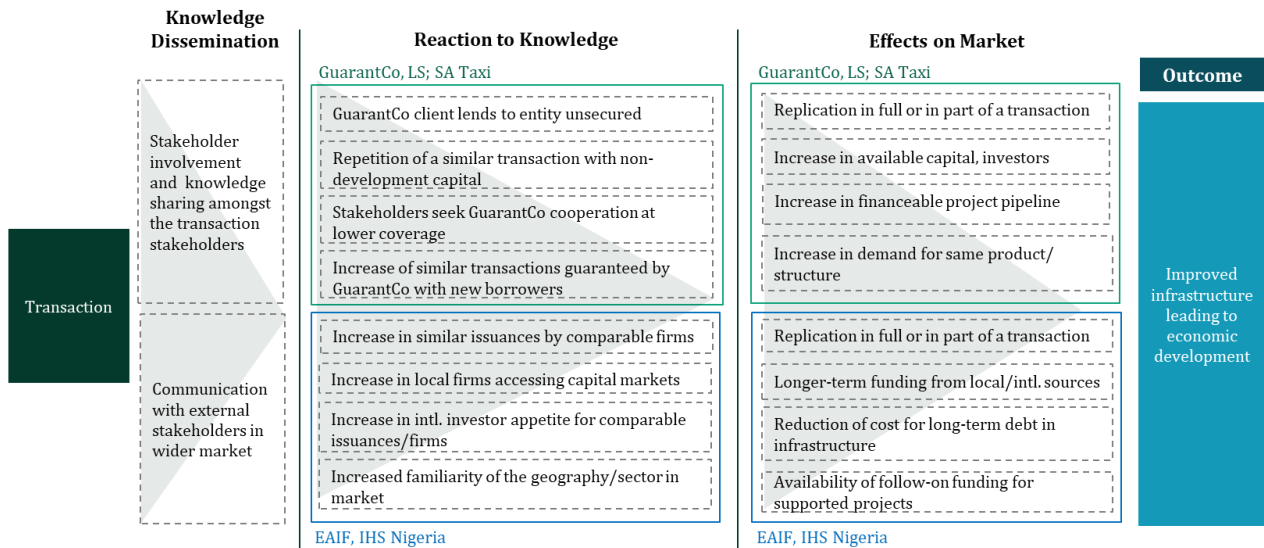
<sup>8</sup> Eligible Countries in Local Currency only: India, Bhutan, Vietnam, Indonesia, PNG, Philippines, Mongolia, Uzbekistan, Kyrgyzstan, Georgia, Armenia, Ukraine, Moldova, Morocco, Senegal, Gambia, Ghana, Benin, Burkina Faso, Equatorial Guinea, Angola, Tanzania, Mozambique, Djibouti, Lesotho, Swaziland, Guyana, Bolivia, Paraguay, Haiti, Guatemala, Honduras, El Salvador, Nicaragua



**Effects on Market:** The outputs or impact of the demonstration. These may include: an increase in transactions replicating in full or in part the demonstration; increased amounts of funds available for the demonstrated activities; increased number of similar pipeline projects for the companies.

For each case study, the figure below serves as a guide to summarize whether and how the underlying transaction created change in behaviour or perception by market participants and what effects on the markets these changes imparted.

Figure 3 Pathway to demonstration effects

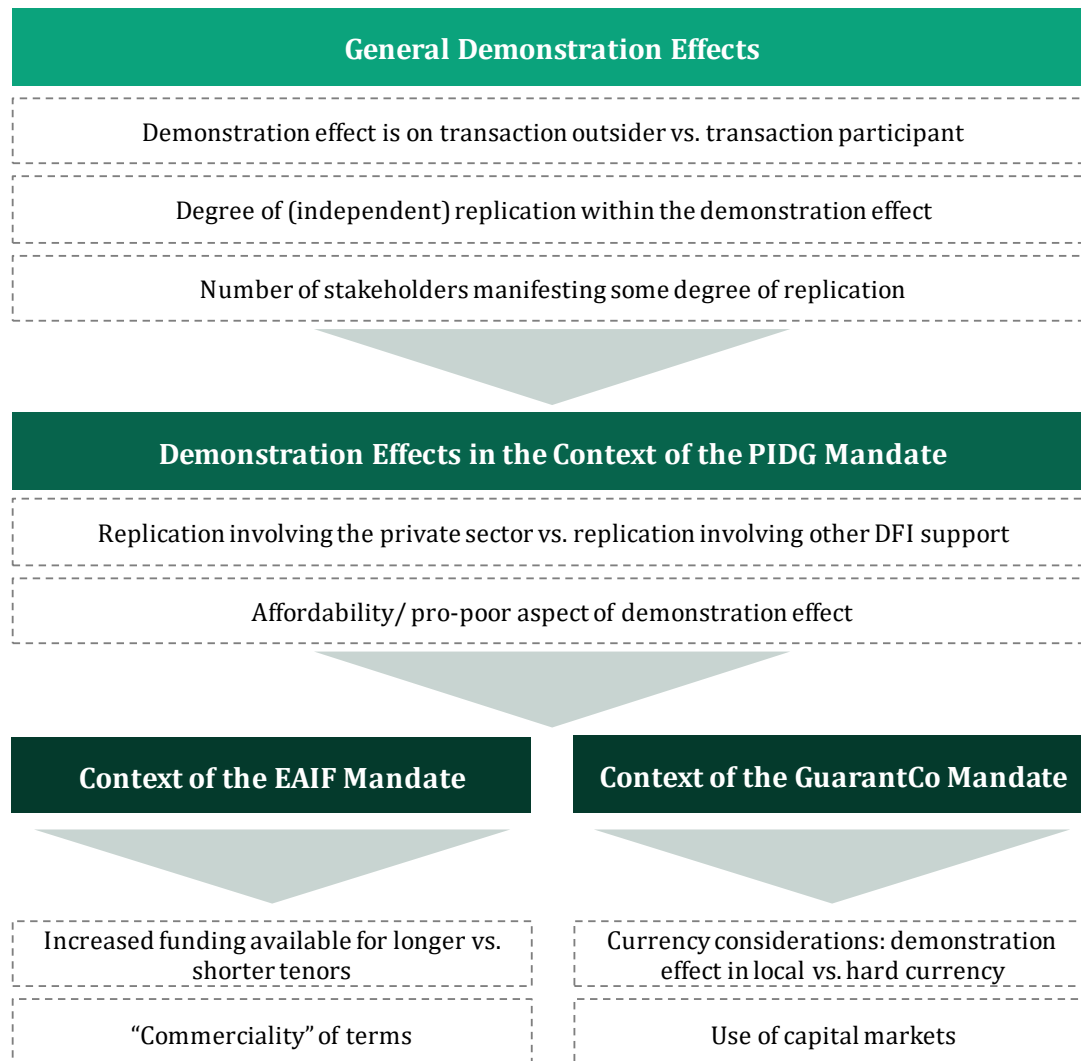


**Quality of Demonstration Effects**

Within the definition **“A change in behaviour or perception amongst market participants that is (1) in reaction to a transaction with participation of EAIF and GuarantCo and (2) leads to some form of replication”** we can further analyse the different types and assess the degree to which a demonstration has been successful in engendering change. In order to do this, we must recognise that there exist different layers to what defines the “quality” of a demonstration effect. In a general setting, for example, it is easy to recognise that full, independent replication is a higher quality effect than repetition of the transaction with similar stakeholders. However, these more general attributes must then be layered with the specific goal of PIDG, and then again with each company’s own mandate.

In Figure 4 below, we outline the different levels of specificity of demonstration effects, and within those the different aspects which contribute to the “quality” of a given demonstration effect:

Figure 4 Quality of Demonstration Effects Waterfall Approach



**At general level**

- **Outsider vs. participant:** is the demonstration effect manifesting on market participants that took part in the transaction or on others who were not involved? A demonstration effect manifesting through entities not previously involved in the transaction implies that the demonstration sent a strong signal to the market with respect to the transaction’s viability. A demonstration effect which manifests primarily amongst previous participants indicates that the transfer mechanism between the demonstration and the market was weaker.
- **Degree of replication:** for a demonstration effect in any context, by any entity, the degree to which the demonstration is replicated is a significant indicator of the strength of the demonstration effect.
- **Number of demonstration effects,** i.e. number of stakeholders who display demonstration effects either through full or partial replication of a transaction.



### At PIDG level

- **Degree of private sector involvement in the effect:** PIDG's overall aim includes catalysing increased private sector participation in infrastructure finance. With this in mind, a demonstration effect among private investors will be stronger than among public ones.
- **Affordability and pro-poor aspect of the effect:** does the replication have a pro-poor approach, or does it finance infrastructure aiming to provide an affordable service? Poverty relief through increased infrastructure development is one of PIDG's target outcomes, to this end any replication which has a pro-poor or affordability aspect will be a higher quality demonstration effect.

### At EAIF & GuarantCo level

#### *EAIF:*

- **Tenor of funding now available in the market:** EAIF looks to supply longer term debt for private sector infrastructure projects, hence a demonstration effect which not only displays increased availability of investment capital for the sector, but also of longer term capital, will more strongly align with EAIF's goals.
- **Commerciality of terms in the replication:** EAIF also looks to demonstrate that the activities it engages in can be carried out on commercial terms. More commercial replications (for instance those without DFI participation or dependence on subsidy) may therefore be viewed as higher quality demonstration effects.

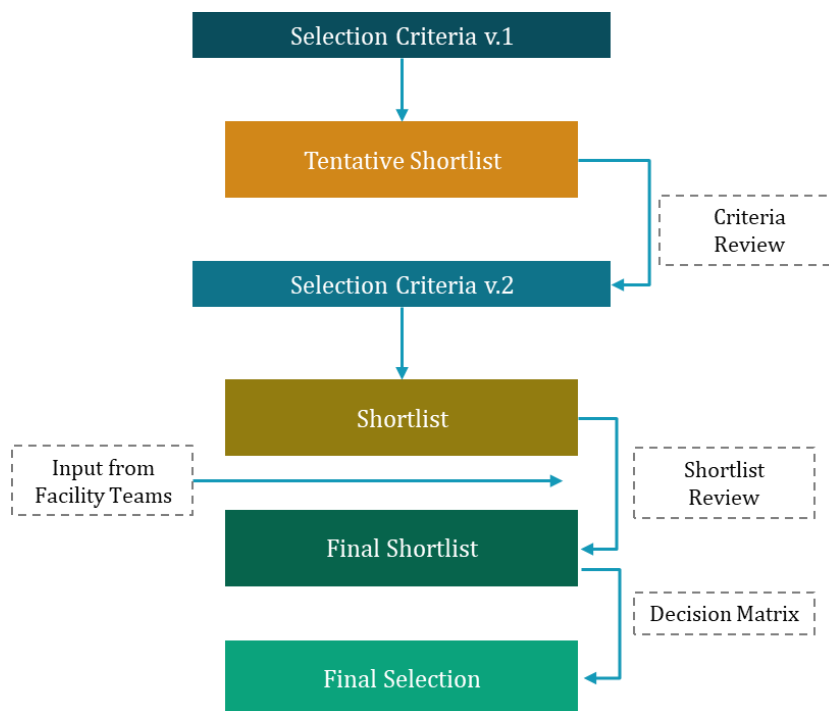
#### *GuarantCo:*

- **Currency of funding now available in the market:** GuarantCo looks to increase the availability of local currency funding for infrastructure, hence a transaction with significant local currency component will be a higher quality demonstration effect than one which relies on hard currency only.
- **Use of capital markets:** aside from encouraging the use of local currency, GuarantCo supports the use of capital markets for infrastructure finance. Transactions which include a capital markets angle, such as a bond, may thus score more highly than ones that do not.

## 3.3 CASE STUDY SELECTION PROCESS

The selection of case studies was an iterative process. The LHGP team worked with PIDG to define the criteria for selection of case study transactions, applied these to the portfolio of projects, then revisited these in consultations with both GuarantCo and EAIF to obtain background information on the shortlisted cases, and further refined the shortlist. The process is illustrated in Figure 5 below.

Figure 5 Process for case study selection



### ***Case study selection methodology: Criterion-based selection vs Sampling***

With only three cases to be studied, random or quasi-random sampling was not deemed a suitable approach for case study selection, as this could potentially yield either two very similar projects or projects which are not suitable for examination due to lack of data or other technical difficulties. As a result, a criterion-based selection approach was chosen, which allows for discretion in the choice of the case studies.

The case studies were selected using a top-down approach, the first step of which, was to identify key selection criteria; LHGP worked with PIDG to define these. This resulted in a smaller pool of possible projects, for which the criteria were further refined. The criteria for each entity were chosen so as to provide case studies with minimum overlap both in terms of sector and geography, thus proving as representative as possible of the broad range of sectors and geographies covered by EAIF and GuarantCo. This led to a shortlist of transactions which was then filtered through consultation with the relevant GuarantCo and EAIF teams.

The final list of criteria used was the following:

- **Transaction Year:** transactions closed before 2014 were excluded due to expected difficulties gathering reliable information (with the exception of deals that were directly linked to a second transaction in the qualifying period);
- **Geography:** regional diversity across the two case studies;
- **“Core” vs. “non-Core” sectors:** the case studies would ideally capture both more traditional PIDG sectors such as renewable energy and less traditional ones such as industry and telecoms (non-traditional at the time of the transaction);
- **ESG consideration:** whilst all projects are thoroughly vetted and ESG impact-approved, some may have required additional considerations given the sector they are in, with this additional specificity in mind, these projects were discarded as they tend to be less representative of the PIDG Companies’ activities;

- **Capital market development:** the initial thinking was that one case study should be in a more developed capital market whilst the other in a less developed one, in order to be able to assess the differential effect (if possible, given the sample size) of this on the demonstration effect of the projects. This requirement was relaxed, as the activities of the two companies are sufficiently different to warrant being tested in markets at similar levels of development.

This set of criteria yielded the below case study shortlist, to which SA Taxi was added at a later stage as a rapid review case study, conducted based on a limited number of interviews and information readily available to LHGP. The matrix identifies preferred combinations based on the above criteria (including an appropriate mix of sectors reflective of EAIF and GuarantCo's portfolios) in green. Cells in red indicate unsuitable combinations, while yellow cells indicate combinations to be considered as secondary options.

Figure 6 Case Study Shortlist

GuarantCo	EAIF		
	IHS Nigeria*	Bugoye Hydro Uganda	Akuo-Kita Mali
Mobilink Pakistan	✘	✔	✔
ByCo Oil Pakistan	✘	✔	✔
Essel Clean Solutions, Nepal	✔	✔	✔

\* EAIF has supported multiple transactions for Helios, the most recent of which was a large bond issuance with international investors. For the purpose of the case study, were Helios to be selected, a subset of the transactions would be analysed; for example, the two transactions in Nigeria.

### 3.4 DATA COLLECTION

The case study assessments were based on both qualitative and quantitative data.

**Quantitative data** was used in two ways:

1. To understand the macro and political context surrounding the transactions, this includes controlling for external factors which may have given rise to spurious results;
2. As an additional way of assessing demonstration effects.

This data included:

- Macroeconomic indicators such as interest rates (local and foreign), foreign exchange rates, GDP growth etc;
- Sector-specific data such as previous funding sizes, sectoral developments in regulation, and sector growth.

**Qualitative data**, which was collected through interviews with relevant stakeholders, served three main purposes:

1. Corroboration or contradiction of insights gained from quantitative data;
2. Discovery of additional information relevant for the assessment of demonstration effects;
3. Capture of nuance in market perceptions and provision of most recent information of developments in the markets.

Qualitative information was gathered through semi-guided interviews. Both interview methodology and interviewee selection are discussed further in the sub-sections below.

**3.4.1 INTERVIEWEE SELECTION METHODOLOGY**

In choosing a methodology for the selection of interviewees, both random and non-random sampling techniques were considered, with the latter being chosen in order to maximise the volume and quality of feedback which could be obtained. As the participants to be interviewed were identified based on their direct or indirect relation to the case study transactions, non-probability sampling was used.

Under the umbrella of non-random sampling, three sub-types can be distinguished: convenience (sampling by accessibility), quota (sample established to reflect proportions according to categories), and snowball-sampling (sampling according to a chain of referral). Snowball sampling was used for the selection of interviewees: stakeholders identified as having relevant knowledge of the case study transaction point to other relevant stakeholders and/or make introductions to these, allowing the group of interviewees to develop further as more interviews took place.

An initial list of stakeholders to act as the “seed” for this methodology was necessary. This list of key stakeholders was compiled based on expected participation in the transactions. The types of institutions identified as relevant stakeholders for interviews are shown in Table 1 below. This list was then shared directly with PIDG and respective EAIF and GuarantCo teams in order to secure the first set of interviews with stakeholders. These interviews were then used to gather feedback for the case study and to identify other relevant stakeholders to interview.

*Table 1 Interviewee Types\**

EAIF – IHS Nigeria	GuarantCo –Lower Solu
Corporate Issuers; DFI Anchor Investors; Commercial Debt Investors; Legal Advisers; Exchanges and Exchange Intermediaries; Underwriters/Bookrunners; Rating Agencies; Other Consultants (e.g. for Telecoms Market)	Project Sponsors/Developer; Debt Investors (international and local); Equity Investors; Legal Advisers; E&S Advisers, Tech Advisers, Insurance Providers; Government Agencies (e.g. state utility Nepal Electricity Authority, Department of Electricity Development for licenses etc.)

*\*The SA Taxi case study, as a rapid review, is not included in this table.*

The role EAIF and GuarantCo played in providing the first stakeholder connections is also known as acting as a “gatekeeper”, further layers of gatekeepers within the stakeholder structure were later identified. Going through gatekeepers offers two essential benefits: 1) their insights on relevant stakeholders and routes to interviewing them contribute to an efficient sampling process; and 2) the gatekeeper’s expertise allows the interviewer to corroborate hypotheses on demonstration effects, which have been formed through independent research, before testing them in the interviews.

Despite the significant benefits, a challenge that must be considered when using a gatekeeper rather than directly contacting prospective interviewees lies in the gatekeeper’s (intended or unintended) ability to influence the interview process. Although LHGP informed the gatekeepers that potential interviewees should not be informed of the specific nature of the interview (i.e. the assessment of demonstration effects), a risk of bias remains in taking this approach.

For Lower Solu, GuarantCo provided the contact to the Nepalese developer in the Joint Venture, Clean Developers, who acted as the gatekeeper to the other Nepalese stakeholders in the transaction. On the international debt side, FMO, who are leading the consortium of DFIs, provided the contacts to other

international lenders. On the local debt side, a former lead at Prime Bank, the Nepali lead arranger of local currency credit, acted as gatekeeper to the local banks inside and outside of the transaction.

For IHS Nigeria, the EAIF team established contact with one of the bookrunners in the IHS 2016 bond issuance. While the bookrunner provided valuable insights on learnings among transaction participants more broadly, their role as underwriters in an open market transaction prohibited them from disclosing any specific investors or orderbook details.

For SA Taxi, the recipient entity, SA Taxi, themselves acted as a primary gatekeeper to local banks and other local stakeholders.

### 3.4.2 INTERVIEW METHODOLOGY

Semi-structured interviews were chosen, as the method allows for comparability between interview data sets while leaving an opportunity window to ask ad-hoc follow-on questions that might reveal particular insights in a specific case or context. Alternatives to semi-structured interviews are:

- Structured interviews i.e. utilization of a pre-defined set of questions; this approach is best suited to obtaining survey-style information from a large pool of respondents;
- Unstructured interviews i.e. utilization of unorganized, context-dependent question, which are best suited for exploratory research i.e. to establish rather than to test hypotheses.

Further an “interview guide” was developed to avoid leading interviewees, while also ensuring that assumptions on expected demonstration effects were being tested. Interview guides followed a top-down logic, structured as follows:

Section 1: Standard introductory questions to assess or confirm the interviewee’s degree of involvement in the underlying project.

Section 2: Standard general questions about the sector and market landscape without mention of the transaction in question (IHS/ECS/SA Taxi).

Section 3: Transaction specific questions, without mention of any specific demonstration effects.

Section 4: Demonstration effect question to test research team hypotheses. As intended by the semi-structured interview concept, follow-on questions, either for clarification or probing areas of interest, were asked.

## 4 CASE STUDY 1: GUARANTCO – LOWER SOLU, NEPAL

### 4.1 PROJECT BACKGROUND

Lower Solu (also known as Essel Clean Solu or ECS) is an 82 MW run-of-the-river (ROR) hydroelectric power plant in north-eastern Nepal. The project was developed by the Essel Clean Solu Hydropower Pvt. Ltd, a Special Purpose Vehicle (SPV) sponsored by a consortium of Indian-owned Essel Infraprojects Ltd, Nepal's Clean Developers, and five other Nepalese investors. The project reached financial close in December 2014. Total project cost was USD 191 million.

Lower Solu was the first internationally funded hydropower project to reach financial close in Nepal in nearly two decades, primarily due to the Nepalese Civil War (1996 to 2006) which had a detrimental impact on infrastructure development in the country. Not only was Lower Solu the first project with international investors since the war, but also the first hydropower project in Nepal to be funded by both local and international debt. With both local and hard currency debt in its financial structure, Lower Solu's Power Purchase Agreement (PPA) was negotiated to include payments in both local and hard currency. While the tariff has been set in NPR with the exchange rate against USD fixed for the first 10 years, 55% of the payments will be in USD and 45% will be in NPR.

Beyond its financial structure, Lower Solu further stands out in the way the project was developed: while the Nepalese licencing regime follows a first-come-first-serve (FCFS) process, Lower Solu, along with five other priority projects, (together known as the "super six") was tendered through a competitive process. The Lower Solu license was awarded to the Clean Developers and Essel Infrastructure Ltd. Joint venture, who had bid USD 2.6 million.

### 4.2 DESCRIPTION OF THE TRANSACTION

Lower Solu reached financial close in December 2014 with total committed capital of USD 191 million. The capital structure comprised of 68% Senior Debt (USD 130 million), 6.5% Subordinate Debt (USD 12.5 million) and 25.5% Equity (USD 48.5 million). The largest direct shareholder in the project is Essel Infrastructure Ltd (49%), a subsidiary of the Indian multi-business group Essel, while the main Nepalese stakeholder is Clean Developers (part of Rathi Group, which owns an aggregate stake of 27.4%). The remaining shares are divided between five Nepalese entities.

Offshore senior debt (USD 95 million) was provided by three DFIs: FMO, DEG, BIO, and the OPEC Fund, OFID, along with Dutch commercial investor, Triodos Bank (USD 5 million) while a subordinate loan (USD 12.5 million) was provided by FMO.

Local commercial debt to the amount of equivalent USD 30 million was provided by five Nepalese financial institutions: the lead arranger, Prime Bank, along with Jalvidhyut Lagani Tatha Bikas Company (also known by its English name Hydroelectricity Investment and Development Company, HIDCL), Nepal SBI Bank, Prabhu Bank, and Siddharta Bank. A local currency credit guarantee of NPR 2.78 billion (USD 28.2 million). 95% of the local commercial debt, was provided by GuarantCo.

4.2.1 STAKEHOLDER TABLE

The following table provides an overview of the various stakeholders that were directly involved in the transaction, i.e. the local and international shareholders and lenders, as well as the intermediaries including legal and technical advisers and regulators.

Table 2 Stakeholder Table

Institution Type	Institution	Market Activities
Sponsor SPV/ Project Developer	Essel Clean Solu Pvt Ltd.	Reached financial close for the first IPP in the country that both local and international financing
Equity Investors (local)	Clean Developers	First Nepalese developer in an IPP with local and international funding
	Rathi Group/Green Valley Bindvasini Garment Industries Nepal Shalimar Paints Nepsino Trading Company Clean Energy Development Bank (now NMB Bank)	First Nepalese equity sponsor on an IPP with both local and international financing
Equity Investors (international)	Essel Infraprojects Ltd	First foreign/Indian equity sponsor in a Nepalese IPP with both local and international financing Largest individual equity investor in the transaction
Debt Investors (International)	FMO (DFI arranger) DEG BIO OPEC Fund OFID	First DFI to participate in Nepalese IPP with both local and international financing
	Triodos Bank	First international commercial debt investor in a Nepalese IPP with both local and international financing
Debt Investors (local)	Prime Bank (Lead Arranger ECS) HIDCL, Nepal SBI bank Prabhu Bank Siddharta Bank	First local debt investor in a Nepalese IPP with both local and international financing
Legal Advisers	Neupane Law, Pioneer Law (local)	Legal Adviser in first Nepalese IPP with both local and international financing; Advised FMO and DFI consortium
	Shearman & Stirling Lahmeyer Clifford Chance (international)	Legal Adviser in first Nepalese IPP with both local and international financing; Advised ECS, Essel
Insurance	AON Global (recipient) Moore McNeil (lenders)	Provided Insurance to local and international stakeholders
Tech Advisers	Parsons Brinckerhoff (lenders)	Tech Adviser in first Nepalese IPP with both local and international financing; Tech Adviser to FMO and DFI consortium
E&S Advisers	AECOM India (recipient)	Tech Adviser in first Nepalese IPP with both local and international financing; Provided E&S assessment to ECS
Government	NEA (off-taker)	Provided guarantee to fund (USD 29 million) and build transmission line from grid to first Nepalese IPP with both local and international financing; Provided 30-year PPA
	DoED (licensing)	Provided first pre-packed tender that included most of the licenses for ECS



## 4.2.2 MARKET CONTEXT

### *Macroeconomic Indicators*

At 29 million people and a GDP of USD 21.1 billion as of 2016, Nepal ranks among the smaller economies in South Asia. After the 2015 earthquake, which had struck near the capital Kathmandu and caused around 9,000 fatalities and severe damage to Kathmandu's infrastructure, Nepal's growth has shown a strong rebound fuelled by reconstruction efforts, normalization of trade with its largest trading partner (India), and favourable monsoon seasons benefiting the agricultural sector, which accounts for nearly a third of GDP. The Nepalese Rupee is pegged to the Indian Rupee and depreciated significantly between 2013 and 2015, however it has since stabilised.

### *Hydro Sector in Nepal*

Nepal has an economically viable hydroelectric capacity potential of more than 40GW, however the country's total power generation capacity in 2016 amounted to only 0.9 GW, with the state utility Nepal Electricity Authority (NEA) generating 540 MW (485 MW of which was hydropower and 55 MW was derived from liquid fuel), and total IPP capacity (hydropower only) of 360 MW.<sup>9</sup> Hydropower consequently accounts for 94% in Nepal's generation mix. Prior to Lower Solu, energy projects locally deemed as larger (above 25 MW) were typically funded solely by international development finance institutions, whilst local institutions provided funding for smaller projects (less than 25 MW).

In recent years, the Government of Nepal (GoN) has initiated several policy changes to boost the development of hydropower projects, and local ability to finance these, resulting in significant shifts in the investment landscape since 2014. Therefore, the presence and quality of any potential demonstration effects of the Lower Solu project on the hydropower or wider infrastructure finance sector should be viewed in the context of these rapid changes to both financial regulation and the infrastructure sector at large.

Key regulation which has since been adopted, includes provisions regarding:

- Documentation: development of a Project Development Agreement (PDA) by the Nepal Investment Board (IBN); guidelines for Power Purchasing Agreement (PPA) structures for projects below and above 100 MW;
- The Banking Sector: in 2015, banks' minimum paid-up capital requirement was raised by four times; banks' mandatory minimum lending to the hydro sector was decreased from 10% to 5%; in March 2018, regulation was passed to allow banks to borrow from IFIs for infrastructure lending under specific terms: 5 years maximum tenor, interest rate is capped at 6-month Libor +30 bps; and
- The country's energy mix: run-of-the-river (ROR) hydro projects shall not exceed 25-30% of the energy mix as per "National Energy Crisis Mitigation Plan and Ten-Year Electricity Development Plan 2016"<sup>10</sup>.

The recent liquidity crunch (mid-2016) in Nepal has led to a slow-down in lending since the re-capitalisation of the banks in 2015. While approximately 50 new IPP-owned hydropower plants have been commissioned since 2015 and 50 more – nearly all of which financed by local financial institutions - are scheduled to be commissioned by 2022, an increasing number of projects under construction are being negatively impacted by an ongoing liquidity crunch in Nepal's banking sector as local financial institutions struggle to disburse the construction loans.

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<sup>9</sup>Alam, Firoz/ Alam, Quamrul/ Reza, Suman/ Khrushi-ul-Alam, SM/ Saleque, Khondkar/ Chowdhury, Harun (2017), *A review of hydropower projects in Nepal*, Energy Procedia 110 (2017 ) 581 – 585, Elsevier.

<sup>10</sup> A significant amount of the ROR hydro power mix budget has been allocated already.



### 4.3 EXPECTED DEMONSTRATION EFFECTS

The tables below identify the expected demonstration effects and their respective recipients. These are split into general demonstration effects and demonstration effects which more precisely fit within GuarantCo's Theory of Change.

*Table 3 Expected General Demonstration Effects*

Expected General Demonstration Effects	Expected Effect Recipient	Demonstration Effect Identified
1. Increased familiarity with geography	DFIs and international banks, international developers, advisers	✓
2. Increased familiarity with hydro sector	DFIs and international banks, international and local developers, local banks, advisers, EPC firms	✓
3. Increased familiarity with international (project) finance	International and local developers, local banks, government institutions	✓
4. Increased familiarity with structure, terms and documents	DFIs and international banks, international and local developers, local banks, advisers, EPC firms, government institutions	✓
5. Increased use of public tender procurement method	Government institutions <sup>11</sup>	✗

*Table 4 Expected Demonstration Effects specific to GuarantCo*

Expected Demonstration Effects as per GuarantCo Logframe	Expected Effect Recipient	Demonstration Effect Identified
6. Increased familiarity with international ESG standards among local stakeholders	Local banks, developers, contractors and advisers, government institutions	✓
7. Larger pipeline of infrastructure projects that can be guaranteed	DFIs and international banks, international and local developers, local banks	✓
8. Shift from demand from high coverage guarantees to lower coverage	DFIs and international banks, international and local developers, local banks	✓
9. Internal operational adjustments by local market participants.	Local and international banks	✓
10. Increased availability of LCY funding for infrastructure projects	DFIs and international banks, local banks	✓

<sup>11</sup> While evidence was found to support the other demonstration effects, this demonstration effect did not materialise.

11. Increased commitments by GuarantCo clients to do similar LCY deals	International and local developers	✓
12. Increase in the role of capital markets in infrastructure funding	DFIs and international banks, local banks, international and local developers	✓

#### 4.4 DATA ANALYSIS

For the Lower Solu transaction, the most relevant quantitative data was sectoral data regarding hydropower development in Nepal (including installed capacity, energy mix, IPP development etc), and financial sector regulation data. Analysis of this data shows that Lower Solu was developed during a period of currency instability, without established frameworks for international project finance, and with significant domestic shortage of long-term funds. This context may have contributed to the structure through which Lower Solu was funded: a combination of local currency (from the local funders) and hard currency from the international debt providers. This structure was the first of its kind in Nepal.

Expected demonstration effects were identified based on a combination of this quantitative information and GuarantCo's own mandate. These were tested through interviews with the international and local stakeholders in the project. The interviews focused particularly on the market participants' perception of changes within the sector since the Lower Solu transaction, and how / if current developments could be attributed to the precedent set by Lower Solu.

Interviews were arranged and conducted with 40 local and international stakeholders, and followed the semi-structured format outlined in section 3. The response rate was high which allowed the team to obtain a broad set of responses and opinions on current market developments and the role Lower Solu may have played within these.

4.4.1 REALISED DEMONSTRATION EFFECTS

Through stakeholder interviews, all except one of the expected demonstration effects outlined in section 4.3 were confirmed. The following table provides assessments of all realised demonstration effects.

Table 5 Realised Demonstration Effects

Description of effect		Assessment	Quote/data
<b>Effect</b>	<b>1. Increased familiarity with geography</b>		
<b>Description</b>	<p>Knowledge of and interest in Nepal’s macro and investment environment improved directly or indirectly through Lower Solu</p>	<ul style="list-style-type: none"> <li>▪ With one exception, all participating DFIs had little or no previous activity in Nepal and have since increased activity in the country and/or the region; all participating DFIs expressed increased interest in Nepal after Lower Solu; some are in discussion for new projects</li> <li>▪ Non-participating DFIs have contacted participating DFIs after Lower Solu to learn about the situation in Nepal</li> <li>▪ The international bank had already been active in Nepal before Lower Solu; however, through the size and complexity of the project and working with local partners, their understanding deepened</li> </ul>	<ul style="list-style-type: none"> <li>▪ “The hydro power sector in Nepal is very interesting to us; we are in talks for future projects”</li> <li>▪ “we have seen that the realization of deals requires comparably more time as hydro has no long-standing history in Nepal; but we see large potential”</li> <li>▪ “The environment was new to us and is unique in many aspects; we look to do more work in Nepal”</li> </ul>
<b>Effect Recipient</b>	<ul style="list-style-type: none"> <li>▪ DFIs</li> <li>▪ international banks</li> <li>▪ technical and E&amp;S advisers</li> <li>▪ international developers</li> </ul>	<ul style="list-style-type: none"> <li>▪ For the lender’s technical and E&amp;S advisers, it was the first project in Nepal, the local setting was new to them and building on that knowledge they are keen to secure more mandates</li> <li>▪ Lower Solu developers were invited to speak at events with international developers, who subsequently expressed interest; Chinese and Korean developers were mentioned as newly interested parties</li> <li>▪ For the international developer in Lower Solu, it was the first project in Nepal</li> </ul>	

Description of effect	Assessment	Quote/data
<b>Effect</b>	<b>2. Increased familiarity with hydro sector</b>	
<b>Description</b>	<p>Knowledge of technical specs, landscape and policies for hydro-power improved directly or indirectly through Lower Solu</p>	<ul style="list-style-type: none"> <li>▪ “emerging developers in Nepal are mostly new to hydro development”</li> <li>▪ “Lower Solu needed sophisticated geological and geotechnical assessment; we expect knowledge to transcend from that”</li> <li>▪ “Our next project will be PROR (peaking ROR) as it is gov. policy and because the tariff is good. If you have developed ROR, doing PROR should not be challenging [technically]”</li> </ul>
<b>Effect Recipient</b>	<ul style="list-style-type: none"> <li>▪ DFIs</li> <li>▪ international banks</li> <li>▪ local banks</li> <li>▪ developers</li> <li>▪ local contractors</li> </ul>	<ul style="list-style-type: none"> <li>▪ Local banks have been lending to ROR hydro before, but for the interviewed banks Lower Solu was the largest project to that point, which yielded lessons about the costs and other implications of large projects</li> <li>▪ For the local developer it was their first ROR hydro project. They have since become reputable in Nepal’s hydro sector</li> <li>▪ The local contractors in construction increased</li> <li>▪ Various interview participants described that the capacity from ROR hydro envisaged in the government’s energy mix is almost fully under construction. Therefore, peaking ROR and reservoir projects would be more relevant going forward</li> </ul>

Description of effect	Assessment	Quote/data
<b>Effect</b>	<b>3. Increased familiarity with international (project)<sup>12</sup> finance</b>	
<b>Description</b>	<p>Knowledge of local and international investors and/or foreign consortium financing improved directly or indirectly through Lower Solu</p>	<ul style="list-style-type: none"> <li>▪ “you need an arranger that has the patience and capacity to operate in a country that is difficult by international standards, and to structure such a complex deal; Lower Solu has shown that DFIs are best equipped to play this role”</li> <li>▪ “since Lower Solu, some banks are slowly becoming more confident about project finance”</li> <li>▪ “local developers have licences for 200+ MW projects; they’re now looking to IFIs for capital, more so since they’ve seen the interest in Lower Solu”</li> </ul>
<b>Effect Recipient</b>	<ul style="list-style-type: none"> <li>▪ local banks</li> <li>▪ local developers</li> <li>▪ government institutions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Some of the local banks reported that Lower Solu helped them get comfortable with project finance</li> <li>▪ One larger local bank, however, reported they had just set up a project finance department before they approached the Lower Solu developers</li> <li>▪ Local banks largely have no exposure to international finance; the interviewed banks are interested in more projects</li> <li>▪ Local developers, that have not participated in Lower Solu, mostly have no deeper knowledge of Lower Solu or its financial structure as there are many projects currently under development. The Nepal Investment Board (IBN) works closely with the Lower Solu developers and has become more familiar with the DFIs lending to Lower Solu</li> </ul>
<b>Effect</b>	<b>4. Increased familiarity with structure, terms and documents</b>	

<sup>12</sup> Project Finance under the strict definition of a non-recourse financial structure has not been established as even for the international banks, there is a guarantee on the debt service account by the sponsor.

Description of effect		Assessment	Quote/data
<b>Description</b>	Knowledge of regulatory requirement, procedures, key documents improved directly or indirectly through Lower Solu	<ul style="list-style-type: none"> <li>Overall, there was a consensus among participating stakeholders that Lower Solu paved the way for standard documentation such as a Project Development Agreement (PDA), which was developed after Lower Solu and is the first bankable document Nepal has produced</li> <li>Some stakeholders reported that they expect projects going forward faster as they assume more familiarity with the processes and the DFIs within the government institutions, in particular the Central Bank</li> <li>However, different views on this aspect have been brought forward by other local and international stakeholders, who reported that the frequent government change and staff turnover at the Central Bank presented a major bottleneck</li> </ul>	<ul style="list-style-type: none"> <li>"Principally, it is desirable to have an inclusive approach [that includes local and international lenders in same structure], but it will likely remain a rare structure – we have seen that it is expensive for the local banks and the PPA policy has changed"</li> <li>"learning within Central Bank cannot really be assumed as staff changes regularly"</li> <li>"the loan agreement from Lower Solu helped us navigate as a sovereign lender and negotiate the terms for another project"</li> </ul>
<b>Effect Recipient</b>	<ul style="list-style-type: none"> <li>DFIs</li> <li>international banks</li> <li>local banks</li> <li>developers</li> <li>government institutions</li> </ul>		
<b>Effect</b>	<b>6. Increased familiarity with international ESG standards among local stakeholders</b>		
<b>Description</b>	Knowledge of international ESG standards and/or capacity for compliance improved directly or indirectly through Lower Solu	<ul style="list-style-type: none"> <li>Local participating banks and many other interviewed participants highlighted the increased familiarity with international ESG standards, that has transpired from Lower Solu</li> <li>Local contractors reportedly recognized benefits to international standards governing construction and material handling</li> </ul>	<ul style="list-style-type: none"> <li>"The developer's E&amp;S and the EPC staff definitely see the advantage in some of the specific requirements e.g. insulated wires, which are otherwise not standard, but make their work easier and safer"</li> <li>"On ESIA (Environmental and Social Impact Assessment) we have only Lower Solu to learn from"</li> <li>"DOED (the Department of Electricity Development) reached out to IBN to learn</li> </ul>

Description of effect		Assessment	Quote/data
<b>Effect Recipient</b>	<ul style="list-style-type: none"> <li>local banks</li> <li>local developers</li> <li>local contractors and advisers</li> <li>government institutions</li> </ul>	<ul style="list-style-type: none"> <li>To the Nepal Investment Board (IBN) social programming, employment and skill training plans, as well as benefit sharing plans were of particular interest</li> <li>The developers' E&amp;S consultants shared knowledge with the IBN as well as Department of Electricity Development (DOED), which specifically contacted IBN to learn about the social standards employed in Lower Solu</li> <li>For large projects such as Arun III, IBN has made plans to take experts of the Lower Solu team to the construction sites to share learnings</li> </ul>	<p>about the benefit sharing and training schemes in Lower Solu"</p> <ul style="list-style-type: none"> <li>"We will take the E&amp;S specialists for Arun III to Lower Solu so that they can learn about the social programs and see how they are received"</li> </ul>
<b>Effect</b>	<b>7. Larger pipeline of infrastructure projects that can be guaranteed and 8. lower guarantee coverage requirements</b>		
<b>Description</b>	Number of infrastructure projects in Nepal that can be guaranteed, has increased directly or indirectly through Lower Solu	<ul style="list-style-type: none"> <li>As the number of international developers interested in Nepal's hydro sector has increased partly in response to presentation by Lower Solu's developers and local banks reportedly refrain from name lending, guarantees are likely to play a larger role</li> <li>Some of the participating local banks interviewed stated their interest to lend to future projects, for which a guarantee by GuarantCo would be available</li> </ul>	<ul style="list-style-type: none"> <li>"the hydro sector has boomed [since Lower Solu], but the high costs of the guarantee present a challenge because Nepal is not investment-graded and local banks don't value risk-based pricing"</li> <li>"Nepali banks don't do name lending to foreign developers, so for projects by foreign developers, guarantees will help banks find comfort"</li> </ul>
<b>Effect Recipient</b>	<ul style="list-style-type: none"> <li>local banks</li> <li>International developers</li> </ul>	<ul style="list-style-type: none"> <li>Demand for subsequent guarantees locally is increasingly for 50% coverage, rather than 90% coverage, according to GuarantCo approved termsheets</li> </ul>	<ul style="list-style-type: none"> <li>"We would be happy to do another GuarantCo deal, as it adds a second layer of security"</li> </ul>
<b>Effect</b>	<b>9. Internal structural adjustments by local stakeholders</b>		

Description of effect		Assessment	Quote/data
<b>Description</b>	Internal structural adjustments made by local stakeholders to participate in Lower Solu and/or similar future projects	<ul style="list-style-type: none"> <li>▪ A participating local bank reported that they had changed their lending policy to be able to participate in Lower Solu's lending structure</li> <li>▪ The international bank lending to Lower Solu drew on the successful outcome of Lower Solu to mobilize more funding for Emerging Market projects</li> </ul>	<ul style="list-style-type: none"> <li>▪ "we went to the board to change our requirement of a personal guarantee to be able to lend to Lower Solu"</li> <li>▪ "after the success of Lower Solu, it was definitely easier to convince our board to allocate another 10% [ca. EUR 80m] of our [otherwise Europe-focused] Fund to emerging market projects"</li> </ul>
<b>Effect Recipient</b>	<ul style="list-style-type: none"> <li>▪ local banks</li> <li>▪ International banks</li> </ul>		
<b>Effect</b>	<b>10. Increased availability of LCY funding for infrastructure projects</b>		
<b>Description</b>	Local currency funding available for potential infrastructure projects has increased directly or indirectly through Lower Solu	<ul style="list-style-type: none"> <li>▪ A local bank, that had participated in Lower Solu, was interested in lending to another hydropower project guaranteed by GuarantCo</li> <li>▪ A local bank reported that they were considering lending to other renewable energy projects that are being developed by an entity that they got to know through lending to Lower Solu</li> </ul>	<ul style="list-style-type: none"> <li>▪ "[After Lower Solu] we were interested in lending to a hydro project by a Sri Lankan developer with a GuarantCo guarantee; but now [another bank] got the deal"</li> <li>▪ "we have received inquiries for two solar projects, which are very new to Nepal. One of these inquiries came from a contact that we know well through Lower Solu. We are currently assessing these inquiries"</li> </ul>
<b>Effect Recipient</b>	<ul style="list-style-type: none"> <li>▪ local banks</li> <li>▪ international banks</li> <li>▪ DFIs</li> </ul>		
<b>Effect</b>	<b>11. Increased commitments by GuarantCo clients to do similar LCY deals</b>		



Description of effect		Assessment	Quote/data
<b>Description</b>	Institutions that have been beneficiaries of GuarantCo in Lower Solu have made more LCY commitments or expressed intent to do so	<ul style="list-style-type: none"> <li>A local bank that has been a beneficiary of a GuarantCo guarantee, reported that they were looking to lend to a project with a similar financial structure to Lower Solu</li> </ul>	<ul style="list-style-type: none"> <li>"We have taken away great learnings from Lower Solu on how to lend in an international structure and have since looked into an even larger project. For this project we were in talks with the World Bank"</li> </ul>
<b>Effect Recipient</b>	<ul style="list-style-type: none"> <li>local banks</li> <li>developers</li> </ul>		
<b>Effect</b>	<b>12. Increase in the role of capital markets in infrastructure funding</b>		
<b>Description</b>	Funding through capital markets or intent to do so increased directly or indirectly through Lower Solu	<ul style="list-style-type: none"> <li>A local bank, that has participated in another similar transaction since Lower Solu, reported that they were in the process of developing a bond to be issued for hydropower development</li> </ul>	<ul style="list-style-type: none"> <li>"to address the shortage of public capital spending on hydro in Nepal, we are now working towards a bond for hydropower development"</li> </ul>
<b>Effect Recipient</b>	local banks		

**4.4.2 UN-REALISED DEMONSTRATION EFFECTS**

Upon interviewing one of the responsible government institutions, the demonstration effects of increased use of public tender procedures in licencing for hydropower projects could not be confirmed as realised.

*Table 6 Un-Realised Demonstration Effects*

Demonstration Effect	Assessment	Quote/data
<b>Effect</b>	<b>5. Increased use of public tender procurement method</b>	

Demonstration Effect		Assessment	Quote/data
<b>Description</b>	More infrastructure projects are procured on a public tender basis	<ul style="list-style-type: none"> <li>▪ The government institutions overseeing the licence regime stated that Lower Solu was tendered through competitive bidding alongside five other hydropower projects as part of a donor requirement</li> <li>▪ Hydropower licences are currently provided on a first-come-first-serve basis; no change of this policy is reportedly planned in the foreseeable future</li> </ul>	<ul style="list-style-type: none"> <li>▪ “reverting to public procurement is not planned”</li> <li>▪ “the super six projects were tendered because of donor involvement during preparation.”</li> </ul>
<b>Effect Recipient</b>	Government institutions		

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#### 4.4.3 NOTABLE TRANSACTIONS SINCE LOWER SOLU

Lower Solu was the first project in Nepal that had both international and local lenders providing hard and local currency debt, resulting in a PPA which had both local and hard currency components. Typically, larger projects would be funded by international DFIs in hard currency, whilst smaller projects would be funded in local currency by local banks.

Recent notable transactions that bear similarity to Lower Solu in either size or structure include: the 86 MW Solu Khola project, which was developed by a local entity and entirely financed by local banks; the 36 MW Kabeli-A project, which was developed by a consortium of local and international developers and financed by both international and local lenders; and the 216 MW Upper Trishuli project, which was developed by a consortium of local and international entities and financed by DFIs.

These transactions corroborate the perceptions of realised demonstration effects captured in the interviews and illustrate significant developments which include:

- Local banks have developed capacity to lend to larger projects and rapidly invested large amounts following the quadrupling of the banks' minimum paid-up capital requirement in 2015, for example eleven local banks provided the NPR equivalent of USD 184 million for the 86 MW Solu Khola hydropower project.
- Local banks are now more comfortable and able to invest alongside international investors; for example, through its participation in the Lower Solu loan agreement, HIDCL reportedly built key expertise to act as the sovereign lender in the 36 MW Kabeli-A hydropower project.
- DFIs have expanded their knowledge of the hydropower sector in Nepal; FMO and DEG, both lenders to Lower Solu, became lenders to the 216 MW project Upper Trishuli in 2018 along Proparco and the Korea Development Bank (KDB), for whom it is the first investment in Nepal.

*Table 7 Notable Transactions since Lower Solu*

Project	Lower Solu 82 MW	Solu Khola 86 MW	Kabeli-A 36 MW	Upper Trishuli 216 MW
Year of financial close	2014	2016	2016	NA
Developer	Essel Clean Solu (ECS)	Hydro Venture Pvt. Ltd. (100% subsidiary of local business group Sahas Urja)	Kabeli Energy Limited (KEL)	Nepal Water and Energy Development Company (NWEDC)
Total Investment	USD 191 million	~USD 184 million	USD108 million	Expected cost in excess of USD 500 million
PPA	Mixed (USD/NPR)	NPR	Mixed (USD/NPR)	USD
Leverage	74/26	73/27	77/23	NA

Equity Investors	Essel (Indian), Clean Developers, five other local investors	KEL	InfraCo Asia Butwal Power Company (BPC) Asia-Pacific Power-Tech (Chinese)	Korean consortium (KOSEP, Daelim, Kyeryong) IFC Bekesh Pradhanang
Debt Investors	Triodos FMO, BIO, DEG, OFID Prime Bank (lead) HIDCL Nepal SBI Bank Prabhu Bank Siddhartha Bank	11 local banks Nepal Investment Bank (lead)	IFC Canada Climate Change Program (CCCP) IDA HIDLC	IFC (Syndication), ADB DEG Proparco KDB FMO
Guarantee	GuarantCo, 95% coverage	NA	NA	NA

#### 4.5 SUMMARY OF DEMONSTRATION EFFECTS

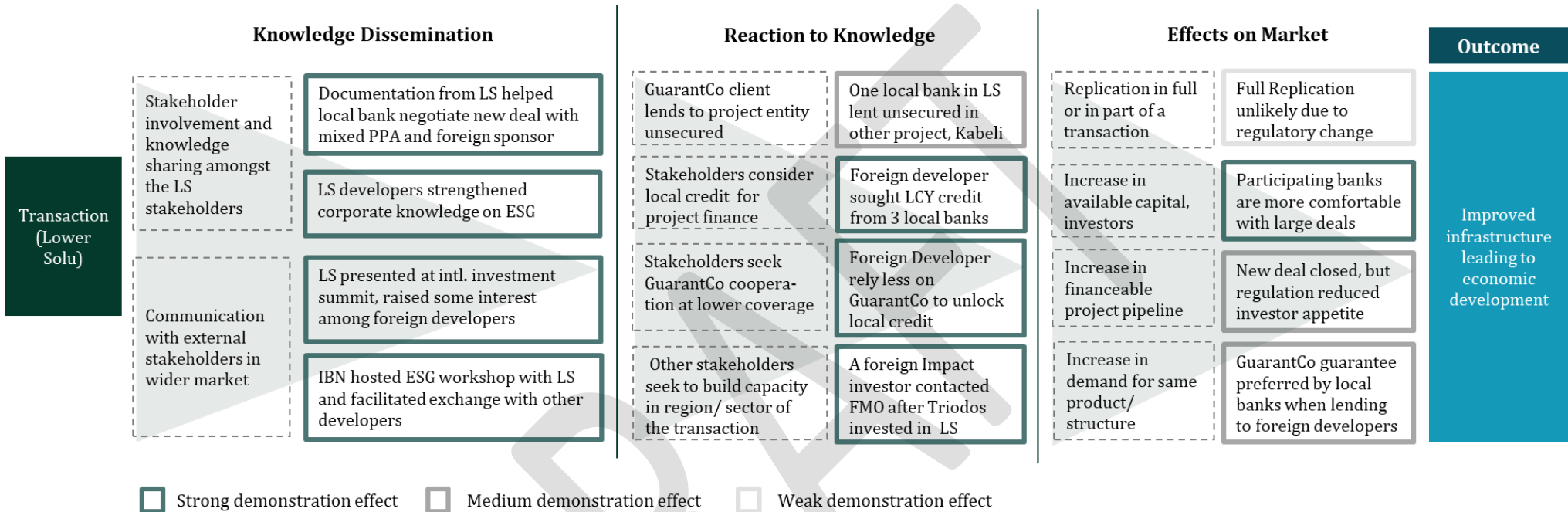
As shown in Figure 7, knowledge dissemination through Lower Solu among the participating stakeholders occurred through the development of documentation during the transaction which helped participants negotiate other deals, as well as through the development of expertise on the implications of ESG standards. Through presentations at international investments summits, information of the successful transaction was shared with local and international external stakeholders. Through a workshop on ESG standards hosted by the Investment Board Nepal (IBN), lessons from Lower Solu were further shared with other local developers. As stakeholders attributed a high relevance to these effects, they were assessed as strong.

Regarding reaction to knowledge, the expected reaction of GuarantCo clients -in this case the local banks – to lend to similar project entities unsecured was only confirmed by one of the participating banks, which is why the demonstration effect was considered of medium impact.

The expected reaction of market stakeholders considering local credit for project finance was confirmed through a transaction after Lower Solu, in which a foreign developer sought a local currency credit from three local banks. The lower level of the guarantee coverage compared to Lower Solu confirmed that stakeholders would seek GuarantCo cooperation at a lower coverage. The expected reaction that other stakeholders would seek to build or expand their capacity in the region and/or sector because of the Lower Solu transaction was confirmed with at least one other private impact investor, who had not participated in Lower Solu or otherwise in Nepal contacting FMO to explore future co-investments.

While the aforementioned effects indicate that Lower Solu has made replication more likely, regulatory change following Lower Solu has made a full replication of the project structure unlikely. GuarantCo's pipeline did, however, indicate a tentative partial replication. As for the expected increase in available capital, the effect of Lower Solu on the market has been found to be strong since local banks are reportedly more comfortable to participate in large deals. The effects of the transaction towards a larger pipeline of financeable projects and a higher demand for the same financial structure are limited due to subsequent regulatory changes.

Figure 7 ECL - Pathways to Demonstration Effects



## 4.6 CONCLUSION

In light of the regulatory developments since Lower Solu, particularly NEA's adoption of a clear policy on PPAs that makes mixed PPAs less likely, a full replication of Lower Solu's financial structure and terms, could not be expected in Nepal.

The interviews indicated that Lower Solu had imparted greater familiarity of the Nepalese hydropower sector, structure, terms and international financing options among various local and international stakeholders, including non-participating ones such as international developers.

In addition to these expected effects, several local stakeholders, participating as well as non-participating, have increased their knowledge of international ESG standards and procedures through Lower Solu. Furthermore, some local banks reportedly changed their internal lending policies to be able to work with a foreign developer.

As Lower Solu has made existing stakeholders more familiar with the hydropower sector in Nepal and brought the attention of more international financial institutions and developers to the country, it contributed to a larger pipeline of potential projects which can be financed through international capital.

Guarantees are likely to play an important role in facilitating finance from local banks, who would otherwise refrain from lending to foreign developers. Interest in guarantees at lower coverage levels also suggests improved perceptions of the viability of projects and reduced uncertainty amongst banks following Lower Solu.

These developments come at a critical time, as the liquidity in Nepal's financial sector reportedly does not suffice to meet capital demands of the country's energy and wider infrastructure development targets

## 5 CASE STUDY 2: EAIF – IHS, NIGERIA

### 5.1 PROJECT BACKGROUND

IHS is the leading telecoms infrastructure firm in Sub-Saharan Africa (SSA). It owns, operates and leases towers across the continent and in Nigeria it has 71% of the mobile tower market at the time of writing. Whilst it has a diverse shareholder base, the group had never issued listed debt internationally. In 2016 IHS acquired Helios Towers Nigeria (HTN), which allowed it to extend its market presence in the country. HTN had issued a USD 250 million bond in 2014, IHS used part of the proceeds of its bond to refinance this debt.

### 5.2 DESCRIPTION OF THE TRANSACTION

IHS issued a USD 800 million 5-year bullet Eurobond in October 2016, one of the very few international issuances out of SSA (ex-South Africa) not in the extractive, financial or agricultural sectors over the past decade. The IHS bond was significant in terms of size, sector, and the investor pool it attracted. The only other issuance in the sector before the IHS issuance was the 2014 HTN Eurobond, which was much smaller at USD 250 million. The IHS bond was listed on the Irish Stock Exchange and targeted US, European and Asian institutional investors.

Whilst IHS is a large company with significant market share in its sector and good growth opportunities, the Eurobond issuance came at a time of market turbulence in Nigeria. This, combined with a sector that may not have been familiar to many investors in an Emerging Market context, and the additional perceived risk due to the company's key geographies (Nigeria, Ghana, Zambia), may have reduced investor comfort in the issuance and made the issuance itself more difficult. The Bond however received significant interest, and though it priced higher than originally expected, it was a successful issuance and a benchmark for a Nigerian entity not in the Oil & Gas or Financial sectors.

Item	IHS 2016
<b>Issuer</b>	IHS Netherlands Holdco B.V.
<b>Guarantors</b>	N/A
<b>Issue Size</b>	USD 800 million
<b>Coupon</b>	9.5%
<b>Issue</b>	Senior Unsecured Notes
<b>Issuer Rating (M/S/F)</b>	B1 / B+ / B+
<b>Issue Rating (M/S/F)</b>	Ba3 / B+ / B+
<b>Tenor</b>	5 years
<b>Issue Date</b>	27 October 2016
<b>Maturity Date</b>	27 October 2021
<b>Format</b>	Reg S / 144A
<b>Spread to USTs at issuance</b>	+815.3bps
<b>Joint Bookrunners</b>	Standard Chartered Bank, Citigroup, Goldman Sachs
<b>Listing</b>	Irish Stock Exchange
<b>Governing Law</b>	New York Law
<b>Oversubscription</b>	<i>not-publicly disclosed</i>
<b>Key Sovereign Risk</b>	Nigeria

<b>Market position</b>	Biggest Tower operator in SSA
<b>Use of proceeds</b>	Refinancing of existing debt (bond and bank loans)
<b>Did EAIF scale-back?</b>	No

### 5.2.1 STAKEHOLDER TABLE

Institution Type	Institution	Market Activities
Issuer	IHS	IHS is Africa's largest mobile tower operator; acquired Helios Tower Nigeria before bond issuance
Investors (international)	Lord Abbett & Co LLC, Alliance Bernstein, La Francaise des Placements, La Francaise AM International, RGA Inc Group, TIIA – CREF, American Century Companies, Ameriprise Fin Group JP Morgan Chase, Nationwide Fund Advisors, First Trust, Van Eck Associates, SEI Investments, Capital Group Companies, Thrivent Financial for Lutherans, Goldman Sachs, Fidelity, Allianz SE, Morgan Stanley, UBS, Interfund Advisory, Janus Henderson, Natixis, SYZ AM Luxembourg, Bankinvest AM, Pinebridge, Rochdale IM	Institutional Investors
Legal Advisers (local)	Templars	Provided legal counsel to the issuer;
Legal Advisers (international)	White & Case	
Underwriting Banks/ Bookrunners	Standard Chartered Goldman Sachs Citibank	Joint book runners <sup>13</sup> ;
Comparable firms	Helios Towers Africa (HTA) Eaton Towers Liquid Telecom	Operate in SSA telecoms infrastructure market; Liquid and HTA issued comparably sized Eurobonds in 2017

<sup>13</sup> Standard Chartered Bank subsequently was lead bookrunner in HTA; Citigroup was also a bookrunner in Liquid Telecom's bond issuance;



### 5.2.2 MARKET DATA AND CONFOUNDING FACTORS

The IHS transaction took place within changing market landscapes both in Nigeria (and more broadly SSA) but also in the investors' own markets.

In order to isolate the impact of demonstration effects from that of broader market changes, we looked at several indicators over the period between the IHS issuance, and its first successor, the HTA issuance, in order to control for these external factors:

- Naira FX rate: the IHS bond was issued in USD, but the local currency suffered severe shocks ahead of issuance, due to the drop in oil prices and the government's policy response, could have subdued demand for Nigerian exposure;  
*Outcome: Naira depreciation started in earnest in late 2014, this would have put investors off any Naira cashflow-related risk, however over the Q2 2016 – Q1 2017 period NGN-USD was constant on average apart from some volatility around the mean, thus currency risk did not change over the period.*
- US and European interest rates: low rates at home push investors to seek return elsewhere, a further decrease in rates may have created non-demonstration driven interest;  
*Outcome: between October 2016 and March 2017 interest rates increased marginally in the investors' "home" markets, thus a further rate decrease was not the driver of the increased uptake by investors.*
- US tax: by March 2017 President Trump's lower tax policy had been announced, and this could have impacted demand.  
*Outcome: US participation did not drive the increase in investor interest over time, thus increased appetite in the HTA bond cannot be entirely caused by tax regime changes or market sentiment changes due to political changes.*

### 5.3 EXPECTED DEMONSTRATION EFFECTS

Demonstration Effect	Effect Recipient	Demonstration Effect Found
1. Increase in similar issuances by comparable firms	Non-extractive, non FI firms in Sub-Saharan Africa rated BB+ and below	✓
2. Increase in local, Nigerian firms accessing capital markets	Large firms in Nigeria	✗
3. Increase in international investor appetite for comparable issuances/firms	International investors	✓
4. Increased familiarity in geography/sector	Investors, Commercial Banks, Lawyers	✓
<i>Additional unexpected demonstration effect observed</i>		
5. Creation of a benchmark	Investors, Commercial Banks	✓

### 5.4 DATA ANALYSIS

For the IHS case study both market data and stakeholder feedback were used to assess demonstration effects. As a publicly traded bond, market data and macroeconomic indicators are particularly relevant, and provide important insight alongside market participant feedback. However, as the transaction pertains to an entity with debt currently listed and traded, there are some restrictions to disclosing non-public information gathered through interviews about both the transaction itself and the company.

The IHS Eurobond was quickly followed by a Eurobond issuance by Helios Towers Africa; a very similar firm in the same sector which is also active in Sub-Saharan Africa and looking to attract international investors into its debt structure. These two similar issuances provide a good comparative study:

*Table 8 IHS and HTA Bond Comparison*

	IHS 2016	HTA 2017
<b>Issuer</b>	IHS Netherlands Holdco B.V.	HTA Group Ltd
<b>Guarantors</b>		Helios Towers Africa, Ltd., and all its subsidiaries
<b>Issue Size</b>	USD 800 million	USD 600 million
<b>Coupon</b>	9.500%	9.125%
<b>Issue</b>	Senior Unsecured	Senior Unsecured
<b>Issuer Rating (M/S/F)</b>	B1 / B+ / B+	B2/B
<b>Issue Rating (M/S/F)</b>	Ba3 / B+ / B+	B2
<b>Tenor</b>	5 years	5 years
<b>Pricing date</b>	12 October 2016	1 March 2017
<b>Issue Date</b>	27 October 2016	8 March 2017
<b>Maturity Date</b>	27 October 2021	8 March 2022
<b>Format</b>	Reg S / 144A	Reg S / 144A
<b>Spread to USTs</b>	+815.3bps	+712.6 bps

<b>Joint Bookrunners</b>	Standard Chartered Bank, Citigroup, and Goldman Sachs	Standard Chartered Bank, BofAML, Standard Bank
<b>Listing</b>	Irish Stock Exchange	Irish Stock Exchange
<b>Oversubscription</b>	<i>lower than 3.3x</i>	3.3x
<b>Key Sovereign Risk</b>	Nigeria	Tanzania, Congo DRC, Ghana, Congo Brazzaville
<b>Market position</b>	Biggest Tower operator in SSA	3 <sup>rd</sup> biggest Tower operator in SSA
<b>Did EAIF scale-back?</b>	No	Yes
<b>5yr UST</b>	1.347	1.987
<b>7yr UST</b>	1.643	2.287

IHS is the larger, more highly rated entity with the bigger share of the market, however the HTA bond which followed in 2017 was able to price lower than the IHS issuance. This differential in cost of capital will have been driven by several different considerations, including:

- Timing of issuance: IHS was particularly unfortunate as it came to market following the downgrade of Nigeria by Moody's and Naira devaluation, as well as negative events in the Nigerian Telecoms sector;
- Company-specific considerations: such as debt ratios and growth prospects;
- Market factors: changes in global macroeconomic contexts between the two issuances.

Taking the above factors into account, it is still likely that the existence of a precedent for the sector and geography (the IHS bond) was able to smooth the second bond's entry into the market.

This differential in cost of capital, 6 months apart, with relatively unchanged markets and favouring slightly the issuance by the weaker corporate is interesting from a demonstration effects perspective. IHS added an additional benchmark to the existing HTN bond for both the sector and its home market and the wider African market. HTA followed the IHS issuance with a similar offering, in a market that had not significantly improved and fared somewhat better.

Below we outline some key indicators that the IHS transaction had several "demonstration effects" on both other issuers in SSA and international investors:

- 1) Despite IHS being a larger firm, with greater market share and better rating, HTA was able to obtain
  - a. a lower cost of capital;
  - b. greater oversubscription
- 2) Whilst the rates environment in the US and Europe continued to be muted throughout, rates expectations improved over the 6 months, with 5-year UST yields increasing from 1.347 to 1.987, hence the increased appetite was not driven by decreasing interest rates in the investors' home markets;
- 3) Whilst DFIs participated in both issuances:
  - a. IHS: EAIF participated at its maximum buy amount (USD 50 million);
  - b. HTA: EAIF was asked to scale back from USD 50 million to USD 40 million due to high demand. (EAIF subsequently sold down further to USD 30 million in the secondary market.)

The reduced need for EAIF participation together with significant oversubscription for the HTA Bond, when not directly driven by corporate or market fundamentals, could imply a strong demonstration effect on the investor base as a result of the IHS issuance. A subtler feature which

can further support this view, is the significantly larger presence of smaller orders by smaller investors in the HTA bond; smaller investors tend to follow rather than lead the market on positions such as this one.

In the absence of a counterfactual, we can only observe a positive trend from IHS on HTA. As discussed below, this has been corroborated by our interviews, with the caveat that timing of the HTA transaction was more fortunate.



5.4.1 REALISED DEMONSTRATION EFFECTS

Demonstration Effect		Assessment	Proof: quote/data
<b>Effect</b>	<b>1. Increase in similar issuances by comparable firms</b>		
<b>Description</b>	A comparable firm, i.e. a firm with similar credit rating, of similar size, active in non-extractive industries in SSA, issuing a hard currency bond listed on an off-shore stock exchange	<ul style="list-style-type: none"> <li>Since the IHS issuance there has been increased capital markets activity by similar firms</li> <li>Whilst this cannot be attributed solely to IHS, setting a benchmark eased the issuance process for following firms</li> </ul>	<ul style="list-style-type: none"> <li>In the telecoms sector: HTA issued 6 months later, Liquid Telecom issued a year later;</li> <li>Eurobonds can be a first step to an IPO, which all four large telecoms infrastructure firm in SSA have considered (although none have materialised or confirmed at this point in time): “once you have a Eurobond you can raise equity”</li> <li>Since working on the IHS transaction the local legal counsel received an increased number of inquiries from local firms looking to potentially issue Eurobonds</li> </ul>
<b>Recipient</b>	Non-extractive, non FI firms in Sub-Saharan Africa rated BB+ and below		
<b>Effect</b>	<b>3. Increase in international investor appetite for comparable issuances/firms</b>		
<b>Description</b>	The appetite of investors in an issuance can be roughly gauged by: pricing of the issuance compared to a comparable benchmark, subscription by investors to the book. If similar issuances (not better issuances) were priced lower than expected or had significantly more demand this could be deemed an increase in investor appetite for the type of transaction.	This effect is reflected in the market data following the issuances from comparable firms. Thus, whilst being a strong effect, it is unquantifiable in its impact.	<ul style="list-style-type: none"> <li>A major emerging market investor at an African Debt Finance meeting quoted IHS as one of the only Corporate Sub-Saharan (ex-RSA) Eurobonds in the market and that he was hoping for more issuance given the positive credit history of some of these bonds. At the same conference it was highlighted that the effect of a bond issuance on the international investor community was much greater than of a loan.</li> <li>The HTA issuance in March 2017:                             <ul style="list-style-type: none"> <li>Was 3x oversubscribed, despite being a weaker credit and smaller firm, this suggests significant increase in investor appetite over the period;</li> <li>Raised capital at a lower coupon despite exposure to several risky countries (Tanzania, Congo Br, Congo DRC and Ghana)</li> </ul> </li> </ul>
<b>Recipient</b>	International investors		

			<ul style="list-style-type: none"> <li>- Fundamentals do not explain the higher appetite and lower coupon of the HTA issuance hence we can infer some impact from the precedent set by IHS.</li> </ul>
<b>Effect</b>	<b>4. Increased familiarity in geography/sector</b>		
<b>Description</b>	A successful transaction communicates viability to the market, and education of investors on a new sector/geography through the roadshows for an initial issuance lowers the barriers for similar, following issuances.	This effect was implied by the market data and assessed during stakeholder interviews. The improved relative performance of the HTA bond implies increased comfort of investors in the sector (telecoms infrastructure) and geography (SSA), this was due to having already assessed a similar bond previously (IHS), with stakeholders confirming that a lot of investor education would have taken place at the IHS roadshow. This was a strong effect but again unquantifiable due to its nature.	<ul style="list-style-type: none"> <li>▪ Industry experts confirmed that during a roadshow such as IHS's significant investor education regarding the sector and business model as well as the geography (SSA) would certainly take place;</li> <li>▪ A significant number of smaller players participated in the HTA issuance, these are not market "leaders" hence showing broader market comfort with the sector and geography;</li> <li>▪ Expect that support would not be needed on a second issuance by IHS or HTA as benchmarks now exist for sector/geography. An issuer in the sector attested: "in a couple of years [after the first issuance] support by DFIs will not be needed";</li> <li>▪ Investors learning about the sector/geography through the first transaction's roadshow makes it easier for investors to engage with subsequent issuances even if they did not buy into the first "IHS brought visibility to non-oil/gas sector in Nigeria".</li> </ul>
<b>Recipient</b>	Investors – both those which participated, but primarily those who didn't participate in IHS but bought later issuances		
<b>Effect</b>	<b>5. Creation of a benchmark</b>		
<b>Description</b>	The setting of a successful precedent enables other market participants to engage more readily in the market	This effect was unexpected and arose through interviews, where the importance of a benchmark for a sector/geography combination was highlighted. This effect cannot be quantified.	<ul style="list-style-type: none"> <li>▪ Creation of a precedent/benchmark/comparable allows market participants to better understand the market and price risk in following transactions;</li> <li>▪ "Every precedent is useful, especially a strong, credible company and story as a comparable to base future deals on".</li> </ul>
<b>Recipient</b>	Investors, Commercial Banks		

5.4.2 UN-REALISED DEMONSTRATION EFFECTS

Demo Effect	Description/explanation of effect	Effect "Recipient"	Potential explanation
<b>Increase in local, Nigerian firms accessing capital markets</b>	An increase in the number of firms in that geography coming to market in a similar way, for similar amounts	Large firms in Nigeria	There are few non-FI and non-extractive firms in Nigeria who could possibly issue in dollars at such a turbulent time for the Nigerian economy, so it is not surprising that there has been a lack of direct followers.

### 5.4.3 OTHER SIGNIFICANT FINDINGS

- **Demonstration effect potential of a bond** is considerably greater than of a loan. A bond builds a publicly accessible credit history. IHS represents not just its sector, but African Eurobonds in general. This effect has become evident not through the interviews conducted but through the spontaneous mention of the bond at conference on African debt financing.
- **Institutional learning** within the commercial banks underwriting the transactions. Subsequent first issuers were able to “piggyback” off the experience banks gained through the IHS issuance in working with DFIs and in the sector and geography;  
*“These bonds are not easy to do... if you have a bank who has recently done deals in your sector, in your geography, it makes it much easier for you to work with them”*
- **DFI “stamp of approval”** on a sector and geography that are both new to investors can have a significant impact on investor participation in a *first* issuance. This is more of an additionality point but it is a demonstration effect of the viability and soundness of the transaction at the time when the transaction is taking place – it doesn’t strictly fit our definition of demonstration effects however;  
*“EAIF is someone you want to have with you if active in countries with very little market activity or unrated countries”*
- **Early EAIF involvement** signals viability of transaction and “credibility of issuer” to other investors during pre-issuance marketing, “important for a new issuer in a non-traditional market/sector”.

## 5.5 SUMMARY OF DEMONSTRATION EFFECTS

As shown below in Figure 8Figure 7, knowledge dissemination through IHS Nigeria among participating stakeholders - including the issuer, legal advisors, bookrunners and investors - was expressed through expertise around the process and IHS acting as a benchmark for the sector. This reportedly improved the banks’ capacity to arrange similar deals in the future. Furthermore, the anchor investment by EAIF reportedly ameliorated concerns regarding ESG and AML by prospective investors.

Communication with the wider market was facilitated through the prospectus and the international roadshow, which educated interested investors on the telecoms sector as well as Nigeria.

Market participants may have<sup>14</sup> reacted to this knowledge with an increase in similar issuances in the same sector, confirmed through bond issuances and other capital market activity by other telecoms firms in Sub Sahara Africa. Moreover, there was reportedly an increase in activity by local Nigerian firms towards accessing capital markets, although this was largely comprised of an increase of Commercial Paper issuances in Nigeria. The most marked demonstration effect was the increased appetite for similar bonds by international investors. Regarding the expectation of increased familiarity of the sector and geography in the wider market, it was confirmed that the IHS issuances broke new ground in providing an international benchmark for issuances out of the sector and geography.

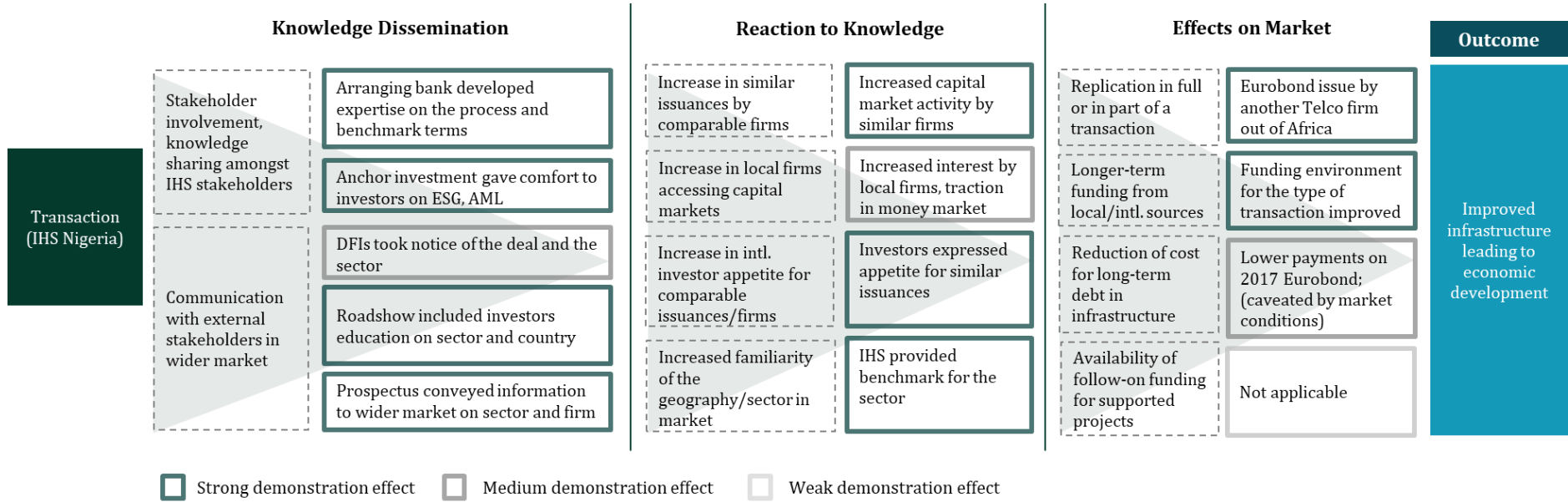
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<sup>14</sup> Whilst there was an increase in issuances following IHS, we cannot say with any certainty that these would not have taken place without IHS’s issuance.



As for the overall effects in the market, a full replication of the transaction was demonstrated through a Eurobond issue by another African telecoms firm, HTA. Overall, it can be said that the funding environment for the type of transaction has improved and the costs of long-term debt decreased, which is corroborated by a lower coupon on the more recent Eurobond (although this is caveated by other external market factors).

Figure 8 IHS Nigeria - Pathway to demonstration effects



## 5.6 CONCLUSIONS

There is considerable evidence to suggest that IHS had a positive effect on comparable firms' appetite and ability to issue Eurobonds. Feedback further suggests that the effect of a bond in stimulating local market interest is considerably greater than of a loan.

IHS were able to issue a bond and attract significant international investor interest at a time of great market turbulence in Nigeria. This fact alone may have encouraged other, similar issuers to raise capital in a similar manner shortly following the issuance.

From the investor perspective, IHS set a benchmark and a precedent for investors for the telecoms infrastructure sector in SSA, an industry and geography combination that most investors likely had no exposure to (as the only similar issuance was the HTN bond in 2014 which was much smaller at USD 250 million). It is impossible to say if and by how much HTA would have priced higher in a scenario without an IHS issuance, but it is clear that IHS played a role in investor and participant education.

## 6 CASE STUDY 3: GUARANTCO - SA TAXI, SOUTH AFRICA

### 6.1 PROJECT BACKGROUND

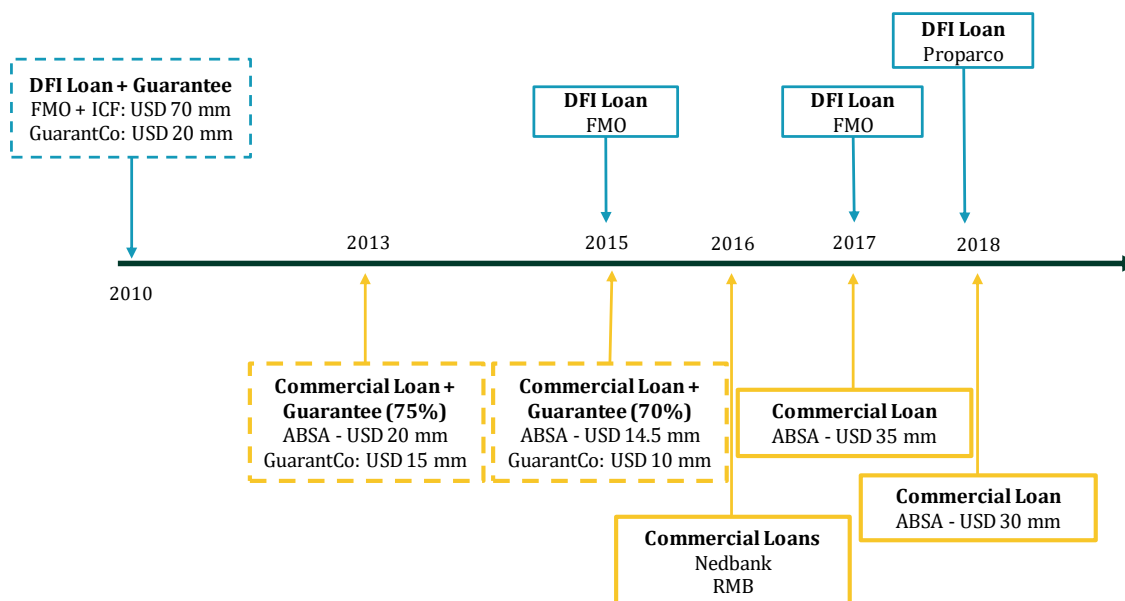
SA Taxi is an integrated lending firm based in South Africa offering credit to micro and small entrepreneurs that provide affordable transportation to lower income workers in South Africa.

### 6.2 DESCRIPTION OF THE TRANSACTION

GuarantCo supported three SA Taxi transactions between 2010-2015, detailed in the table below.

Transaction	SA Taxi Development Finance 1	SA Taxi Development Finance 2	SA Taxi Development Finance 2
Date	2010	2013	2015
Transaction Type	A B Loan by DFI	Commercial Bank Loan	Commercial Bank Loan
Loan Size	USD 70 million	USD 20 million	USD 14.5 million
Guarantee	USD 20 million	USD 15 million	USD 10.1 million
Coverage Ratio	28.6%	75%	70%
Debt providers	FMO (50%); ICF (50%)	ABSA	ABSA
Maturity	7	5	5

#### Timeline of SA Taxi financing activities:



#### 6.2.1 STAKEHOLDER TABLE

Institution Type	Institution	Market Activities
Borrower	SA TAXI	SA Taxi borrowed from DFI and commercial banks to on-lend to clients in affordable transport sector
Lenders	FMO, ICF, ABSA	DFIs lent to SA Taxi to support the entity in becoming eligible for commercial loans; ABSA Bank provided the first commercial loan

Institution Type	Institution	Market Activities
Comparable firms	Shriram (India), Au Financiers (India), Softlogic Finance (Sri Lanka)	While the firms operate in similar sector in other regions, the financial transactions differ: Shriram obtained secured mezzanine funding, while Softlogic and AuF issued credit-enhanced Non-Convertible Debenture (NCD)

### 6.3 EXPECTED DEMONSTRATION EFFECTS

In our initial assessment, we expected to come across the following possible demonstration effects:

Demonstration Effect	Effect Recipient	Demonstration Effects Identified
<b>1.Repetition of a similar transaction with non-development capital</b>	Commercial banks	✓
<b>2.Repetition of similar transaction with a lower level of guarantee</b>	Commercial banks, DFIs	✓
<b>3.Access to commercial debt financing without need for a GuarantCo guarantee</b>	Commercial banks	✓
<b>4. Increase in availability of capital for the sector</b>	Commercial banks, DFIs	✗
<b>5. Increase in number of similar transactions guaranteed by GuarantCo with new borrowers</b>	Local firms comparable to SA Taxi in level of risk, credit history, access to capital	✗
<i>Additional unexpected demonstration effects observed</i>		
<b>6.Development of standardised Loan Term</b>	Commercial banks, DFIs	✓

6.3.1 REALISED DEMONSTRATION EFFECTS

Demonstration Effect		Assessment	Proof: quote/data
<b>Effect</b>	<b>1. Repetition of a similar transaction with non-development capital</b>		
<b>Description</b>	The Borrower is able to borrow outside the DFI community, from commercial financial entities, though still with a guarantee	This was demonstrated by the transactions with ABSA following the FMO loan.	<ul style="list-style-type: none"> <li>SA Taxi was able to borrow USD 35 million across two loan facilities from ABSA 3 and 5 years after the original GuarantCo transaction in 2010;</li> </ul>
<b>Recipient</b>	Commercial banks		
<b>Effect</b>	<b>2. Repetition of similar transaction with a lower level of guarantee</b>		
<b>Description</b>	The Borrower is able to borrow with a lower level of guarantee on the loan being required by the lender	This demonstration effect was clearly displayed in the repeat transactions with ABSA with a lower guarantee.	<ul style="list-style-type: none"> <li>In 2013 SA Taxi was able to borrow USD 20 million from ABSA, a commercial bank in South Africa, with a 75% guarantee from GuarantCo, 2 years later a similar transaction with ABSA only required a 70% guarantee, following the second transaction ABSA has not required a guarantee to lend to SA Taxi</li> </ul>
<b>Recipient</b>	Commercial banks, DFIs		
<b>Effect</b>	<b>3. Access to commercial debt financing without need for a GuarantCo guarantee</b>		
<b>Description</b>	Ability to borrow from commercial entities without requiring a guarantee to increase the credit quality of the transaction	This demonstration effect took place with both transaction participants and entities which did not partake in the original transaction, i.e. other commercial banks.	<ul style="list-style-type: none"> <li>Following two guaranteed loans, ABSA now lends to SA Taxi unguaranteed</li> <li>New banks which previously did not lend to SA Taxi, now participate in its debt without need for a guarantee</li> <li>Since its first transaction with GuarantCo, SA Taxi is now able to borrow, unguaranteed, from every major financial institution in South Africa</li> </ul>
<b>Recipient</b>	Commercial banks		

			<ul style="list-style-type: none"> <li>Additionally: DFIs, not “comfortable with lending to the business” in 2010 now lend to SA Taxi unguaranteed (Proparco)</li> </ul>
<b>Effect</b>	<b>6. Development of standardised Loan Terms</b>		
<b>Description</b>	Development of a successful and working structure for the transactions and associated documentation		All following transactions have been carried out under the same structure
<b>Recipient</b>	N/A		

6.3.2 DEMONSTRATION EFFECTS NOT IDENTIFIED

Demonstration Effect	Description/explanation of effect	Effect “Recipient”	Potential explanation
<b>4. Increase in GuarantCo pipeline for similar transactions</b>	Increase in number of similar transactions which could be or have been guaranteed by GuarantCo with new borrowers in the same sector or geography	Firms in the same sector and/or geography	Whilst local financial institutions such as ABSA have put forward similar transactions, to date these were with other firms in South Africa, a geography which is not a PIDG priority traditionally.
<b>5. Increase in availability of capital for the sector</b>	Commercial Banks and DFIs increasing their financing activities in the same geographical region, sector or for the same type of firms as SA Taxi	Commercial Banks, DFIs	<i>Note: There has been an increase in available capital for SA Taxi, however it is unclear whether this has impacted other similar firms in SA</i>



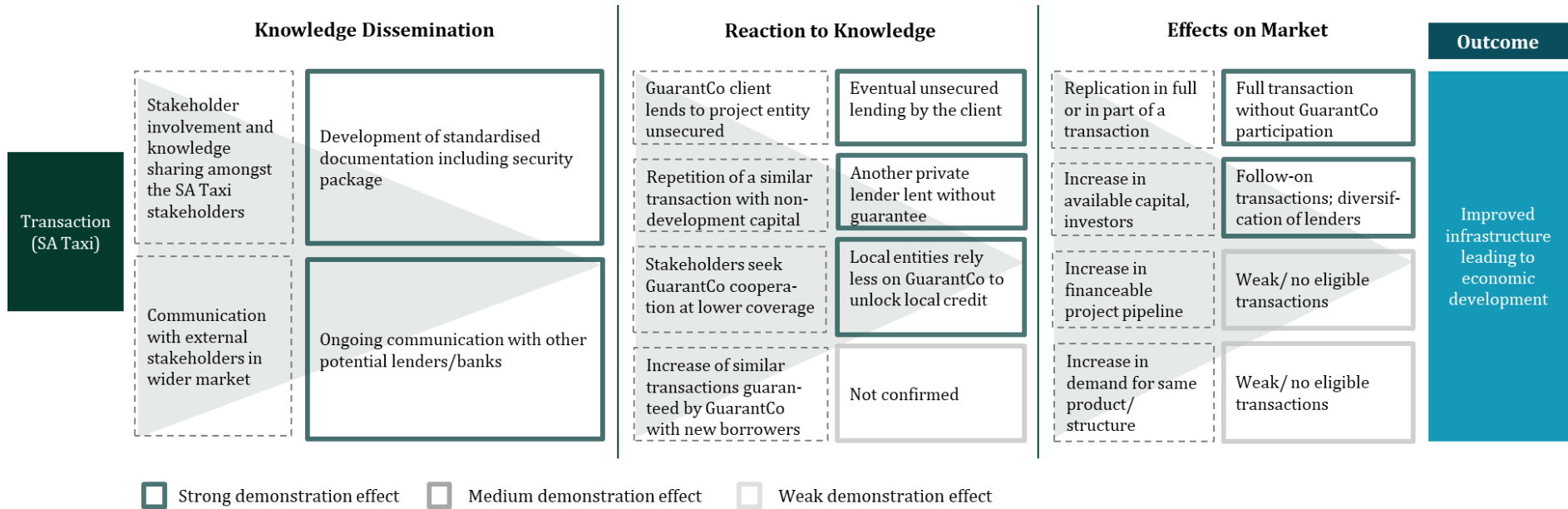
#### 6.4 SUMMARY OF DEMONSTRATION EFFECTS

As highlighted in Figure 9, knowledge dissemination among SA Taxi stakeholders was facilitated through development of standardized documentation by the local bank. The local bank further informed external stakeholders – mostly other prospective and existing clients - to identify more potential borrowers eligible for a guarantee to replicate the transaction.

Regarding the expected reactions within the market, unsecured lending by the client bank to the project entity was confirmed. Furthermore, the projected entity was consequently able to borrow from other commercial banks without the involvement of a guarantee or other forms of developmental capital. Overall, local entities rely less on GuarantCo for financing from local banks.

Among the expected effects on the market, a full replication of the transaction without GuarantCo participation was confirmed as well as an increase in available capital in the sector, although this is caveated by external economic factors. While there is interest in further guarantees, no projects eligible for GuarantCo have so far been identified.

*Figure 9 SA Taxi - Pathway to demonstration effects*



## 6.5 CONCLUSIONS

GuarantCo's SA Taxi transaction had demonstration effects on transaction participants as well as the wider market.

Regarding participants, the GuarantCo guarantees allowed a local bank "to get to know the business model and the management team without taking on excessive risk"<sup>15</sup>, meaning they could build a relationship with the business despite it being a lower credit than they would normally be able to lend to. Following this, the bank was then able to go on to lend to the company without needing further guarantees. Regarding the wider market, the successful transactions carried out with FMO and ABSA demonstrated to other market participants, both DFIs and commercial banks, the viability of lending to the company, resulting in additional loans being extended to SA Taxi and its parent company without the need of a guarantee.

One demonstration effect we were not able to test was the impact on the sector and amount of capital available for similar firms. It is difficult for lenders to directly link a successful transaction to comparable cases, but particularly in the case of SA Taxi given its unique business model.

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<sup>15</sup> As explained to Lion's Head by an employee of the bank familiar with the transactions.

ANNEX

Demonstration Effect Matrix

Case Study 1: GuarantCo – Lower Solu, Nepal

Realization of Demonstration Effects	Stakeholders				
	Local Banks	International lenders	Developers	Intermediaries	Government
Increased familiarity with <b>structure, terms, documents</b>	High confidence				
Increased familiarity with <b>international (project) finance</b>	High confidence	No confidence	High confidence	Limited confidence	
Increased familiarity with <b>international ESG standards</b> among local stakeholders;	High confidence	No confidence	Limited confidence	High confidence	
Increased familiarity with <b>geography</b>	No confidence	High confidence			No confidence
Increased familiarity with <b>hydro sector</b>	No confidence	Limited confidence			No confidence
Internal <b>structural adjustments</b> by market participants.	Limited confidence				
Increased use of <b>public tender procurement method</b>	No confidence				
<b>Effects of the Demonstration Effect in the market</b>					
<b>Larger pipeline</b> of infrastructure projects that can be guaranteed	High confidence			No confidence	
Increased availability of <b>LCY funding</b> for infra projects	High confidence	Limited confidence		No confidence	
Increased <b>commitments</b> by GuarantCo clients to do similar LCY deals	High confidence	Limited confidence		No confidence	
Increase in the <b>role of capital markets</b> in infrastructure funding	High confidence	Limited confidence			No confidence

Colour	Meaning
Dark Green	High confidence; effect confirmed by majority of participants
Grey	Limited confidence; effect confirmed by some participants
Light Grey	No confidence; effect confirmed by none of participants

Case Study 2: EAIF- IHS, Nigeria

Realization of Demonstration Effects	Stakeholders				
	SSA corporates	Private Investors	DFI	Book-runners	Legal Advisers
Increase in similar issuances by comparable firms					
Increase in local, Nigerian firms accessing capital markets					
Increased familiarity in geography/sector					
Positive benchmarking for other transactions					
<b>Effects of the Demonstration Effect in the market</b>					
Increase in <i>interest</i> in issuing similar product (Eurobond)					
Increase in international investor appetite for comparable issuances/firms					

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