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## UNLOCKING INVESTMENT TO ACCELERATE THE LOW CARBON TRANSITION IN MEXICO PROPOSAL TO CREATE A GREEN INVESTMENT AGENCY

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Mexico faces a difficult set of economic challenges from the fiscal pressure created by low oil prices to the geopolitical uncertainty generated by its northern neighbour. At the same time, as a country with 71% of its economy vulnerable to climate change impacts, Mexico must also deliver its ambitious emission reduction and adaptation plans as well as its clean energy targets. Despite having implemented major energy sector reforms, financing the country's Nationally Determined Contribution (NDC) needs a significant additional injection of capital. Barriers to green investment include weakly implemented policies, the lack of a scaled investible project pipeline and lack of project development and financing expertise. A new and more systemic approach is needed.

We argue that Mexico would benefit from a better coordinated public-private financing strategy with a Green Investment Agency at its centre. Working with Mexico's existing National Development Banks (NDBs) – many of which are already active in financing green infrastructure – it would form a central repository of project development and financing expertise capable of developing risk mitigation instruments and securing patient capital. In doing so, it will help Mexico scale up and accelerate the delivery of its low carbon transition through unlocking private investment in climate resilient infrastructure whilst lessening the burden on public resources.



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## I. Introduction

Mexico has already demonstrated global leadership in working to finance and build a climate-resilient economy. It has integrated its climate change objectives into national policy making and has taken important steps towards mitigating and managing the effects of climate change. Looking forward, Mexico has pledged, through its NDC, to reduce its greenhouse gas emissions by 22% by 2030, with an additional contingent target of 36%<sup>1</sup>. Estimates suggest that emission reductions in the power sector will account for nearly one-third of the total required reduction<sup>2</sup>. In 2012, Mexico was the second country in the world to introduce a Climate Change Law and in 2018 Mexico officially started its pilot carbon market exercise which will become fully operational by 2021. This market, the first in Latin America, is valued at US\$ 1bn and is expected to be an important new tool to help Mexico achieve its NDC<sup>3</sup>.

While these successes are to be applauded, the approach taken by the Mexican Government thus far has been largely ad hoc – with the results arguably adding up to less than the sum of their parts. The initiatives and funds in place to reduce Mexico’s greenhouse gas (GHG) emissions and reform its energy sector have largely been developed in isolation from each other; are often of insufficient scale; and as a result, do not effectively address the underlying market failures<sup>4</sup>.

The Climate Change Fund is a case in point. Since its inception in 2013 the fund has received only US\$ 10m through three transactions from Ministry of Environment’s (SEMARNAT) own budget. In 2017, the amount allocated to the Climate Change Fund was US\$ 5.4m. This is a small amount when compared to the US\$ 136bn required by the priority sectors needed to finance Mexico’s NDC to 2030, as estimated by the National Institute of Climate Change (INECC)<sup>5</sup>; and it is miniscule compared to the potential required investment of US\$ 790bn estimated by IFC to achieve the Mexican NDC<sup>6</sup>. Although the Climate Change Fund has the potential to become a key instrument in financing the low carbon transition, revenues from international donors, as well as those coming from the carbon tax are currently ‘lost’ within the

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<sup>1</sup> This is contingent on a global carbon price agreement, access to finance and technology transfer. These pledges are relative to BAU scenario of emissions projections based on economic growth in the absence of climate change policies. This commitment indicates decoupling of GHG and energy use from economic growth, reducing emissions intensity per unit of GDP by 40% with peak emissions around 2026

<sup>2</sup> The energy sector, accounts for 70% of total greenhouse gas (GHG) emissions, In particular, the power sector share of fossil fuel-based- generation was 79% in 2014 and a large percentage of the national consumption of Gas in Mexico, (81% by April 2017<sup>2</sup>) is imported from the United States. Gabriela Moya Toledo, Paula Rolffs “Mexico’s INDCs Harnessing Opportunities in the power sector”, E3G Nov, 2015See <https://www.e3g.org/library/mexicos-indc-harnessing-opportunities-in-the-power-sector>

<sup>3</sup> Subsecretary Rodolfo Lacy in Media Conference Oct, 2017: <https://www.eleconomista.com.mx/mercados/Inicia-simulacion-de-comercio-en-el-mercado-de-carbono-20171022-0037.html> and <https://www.gob.mx/semarnat/articulos/acciones-de-mexico-para-establecer-un-mercado-de-carbono?idiom=es>

<sup>4</sup> This is discussed further in E3G (2017). Accelerating green infrastructure financing

<sup>5</sup> <http://sustentabilidad.enerGreen Investment Agency.gob.mx/portal/DefaultS.aspx?id=2445>

<sup>6</sup> “IFC assessed the national climate change commitments and other policies in 21 countries”. IFC (2017). Climate Investment Opportunities in Emerging Markets



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Ministry of Finance (Hacienda) general budget pool<sup>7</sup> rather than flowing to the Climate Change Fund, which remains underfunded.

Other funds, such as the Energy Transition and Sustainability Fund (FOTEASE) and the Sustainable Energy Fund (FSE), valued at US\$ 21.6m and US\$ 37.47m respectively in 2017<sup>8</sup>, are also in place. However, they work in isolation and the resources are mainly non-recoverable, meaning they cannot be reinvested and depend on Mexico's national oil company PEMEX (Petróleos Mexicanos) and Hacienda for budgetary support<sup>9</sup>.

Most of the public capital being allocated to finance the transition is channelled through Mexico's seven local NDBs. Each one targets specific market segments including: small and medium-sized enterprises (SMEs) by Nacional Financiera (NAFIN); federal Infrastructure by Banco Nacional de Obras y Servicios Públicos (BANOBRAS); export credit agency by Banco Nacional de Comercio Exterior (Bancomext); agriculture by Financiera Nacional de Desarrollo (FND); and housing by Sociedad Hipotecaria Federal (SHF)<sup>10</sup>.

These banks have been instrumental in supporting the development of a low carbon economy in Mexico to date. Bancomext, Banobras and NAFIN have supported successful clean energy projects with a value of up to US\$ 2.6bn<sup>11</sup>. Furthermore, Banobras and NAFIN were the first NDBs to issue sustainable and green bonds in Latin America and SHF has become a success story in promoting investment into energy efficient housing through its ECO CASA Program (discussed later).

However, the NDBs face a range of technical, governance, and regulatory constraints that prevent them from being more effective in facilitating the investment now needed to achieve Mexico's NDC. Additionally, the Basel III rules apply to the Mexican NDB<sup>12</sup> as well as private banks, making long term financing more expensive (capital and liquidity requirements are higher for long term financing); this can make high capex projects requiring longer payback time less attractive to finance<sup>13</sup>.

The crowded public banking landscape adds further challenges. There is a lack of coordination between the different banks which is compounded by a lack of clarity regarding the roles and responsibilities each bank has in securing sufficient finance to deliver emission reductions across the sectors for which they are responsible, and which are necessary to deliver Mexico's NDC.

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<sup>7</sup> See <https://www.tm.org.mx/presupuesto-cambio-climatico-2018/>

<sup>8</sup> Interview with Efrain Villanueva, speaker of the Ministry of Energy, 19 August 2017.

<sup>9</sup> The FSE receives a designated 20% of the amount that the Mexican Petroleum Fund which corresponds to the 20% of multiplying .0065 by the oil income approved by the General Law of Income.

<sup>10</sup> There are other NDBs, but their targets are on saving and financial inclusion (BANSEFI) and the Mexican army (Banjercito)

<sup>11</sup> Press Conference, Long Term electricity auction, Pedro Joaquin Coldwell, Minister of Energy, August 15<sup>th</sup> 2017

<sup>12</sup> See <http://www.cnbv.gob.mx/SECTORES-SUPERVISADOS/BANCA-DE-DESARROLLO/Preguntas-Frecuentes/Paginas/Banca-de-Desarrollo.aspx>

<sup>13</sup> Narbel, Patrick A. (2013). The Likely Impact of Basel III on a Bank's Appetite for Renewable Energy Financing (October 17, 2013). NHH Dept. of Business and Management Science Discussion Paper No. 2013/10. Available at SSRN: <https://ssrn.com/abstract=2341519> or <http://dx.doi.org/10.2139/ssrn.2341519>



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Given these significant challenges and uncertainties there appears to be a strong case for better coordination among these important institutions. The crowded NDB landscape suggests that this would not be best met by a new bank but instead we argue this could be provided by a Green Investment Agency. This Agency would significantly enhance coordination and builds on the discussion about enhancing capacity that is already underway in Mexico.

## II. Role and functions of a Green Investment Agency

Given the political and policy landscape as well as the evidence presented in our previous briefing, *Accelerating Green Infrastructure Financing in Mexico*<sup>14</sup>, we believe that a Green Investment Agency would play a key role in coordinating Mexico's fragmented and crowded financial infrastructure to deliver the investment needed to achieve Mexico's NDC. Its presence would help rationalise and leverage the financial and intellectual resources currently held in the NDBs and federal government to manage climate-related funds in a coordinated way that is effective in connecting capital to projects and maximises opportunities to 'crowd in' private capital.

### Mission and role

A new dedicated and independent Green Investment Agency would have the mission **to facilitate and scale up the investment needed to accelerate Mexico's transition to a low carbon economy by acting as catalyst to increase investments into low carbon and climate-resilient infrastructure.**

Its role would focus on:

- providing a coordination function between key government departments and agencies including: The National Institute of Ecology and Climate Change (INECC); Agency of Security Energy and Environment (ASEA); Ministries such as Ministry of Environment (SEMARNAT) and Ministry of Energy (SENER); and NDBs such as NAFIN, Bancomext and Banobras;
- acting as a 'critical friend' to the Mexican Government, providing feedback on the impact and efficacy of new public policies to promote further low carbon and resilient infrastructure investment to meet the country's NDC and ensuring they are fit for purpose in incentivising such investment;
- collecting and publishing data on investment needs and progress to meeting those needs in the key sectors established by INECC as priorities (transport, energy and industry are the top three<sup>15</sup>) – and in doing so helping to identify and address emerging investment gaps to meeting investment targets;

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<sup>14</sup> Holmes, I; Orozco, D and Paniagua, A (2017). *Accelerating green infrastructure financing in Mexico: towards sustainable economic growth*

<sup>15</sup> Programa Especial de Cambio Climático 2014-2018 Diario Oficial de la Federación 28-04-2014 [http://www.dof.gob.mx/nota\\_detalle\\_popup.php?codigo=5342492](http://www.dof.gob.mx/nota_detalle_popup.php?codigo=5342492)



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- providing targeted financial and risk mitigation instruments, including credit lines, guarantees, insurance, equity and loans, where these cannot be met by the private sector, the other NDBs or international financial institutions (IFIs).

The Green Investment Agency would be expressly set up to have a higher risk appetite than the NDBs, and to be a more specialised institution with respect to delivering climate change-related investment in Mexico. The Green Investment Agency could complement and leverage the existing NDBs' activities and crowd in the private sector investment needed to deliver Mexico's low carbon economy.

### **Scope and focus**

The Green Investment Agency will need core capacity relating to project finance, clean technology expertise and so on – but beyond this, both the capabilities and priorities of the institution should be determined on a flexible basis, enabling it to be nimble enough to adapt to the challenges that Mexico will face as it transitions towards a low carbon economy.

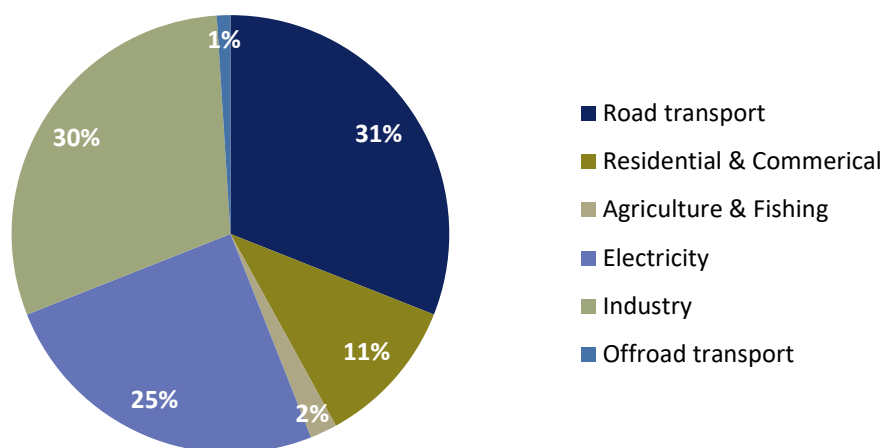
Consequently, its scope and focus will need to be designed in way that it can flex its expertise to focus on changing priorities as the technologies and business models relating different sectors of the low carbon economy develop; policies mature; and the attractiveness of low carbon investment opportunities in Mexico to the private sector increases. It is important that the Green Investment Agency sits at the same level as other NDBs to facilitate the creation of a coordinated and collaborative space to help to turn the NDC aspirations into successful public policy and investment outcomes.

In the first instance, the Green Investment Agency should focus on promoting investment into the key sectors established by INECC as priority: transport, energy and industry, as these are the sectors that emitted the most greenhouse gases in 2016 (see Chart 1).



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Chart 1. Mexico's CO2 Emissions by Sector (2016)



Source: OECD<sup>16</sup>

A key early stage target should be promoting energy efficiency investment in the industrial sector, where it is widely acknowledged that a more activist approach to financing emission reductions is needed<sup>17</sup>. Industry is the second largest emitter of GHG – reducing energy wastage would both help Mexico deliver its NDC and increase the competitiveness of this sector. There is a strong track record among public banks globally in supporting this kind of investment, which often require a combination of technical assistance and access to low cost finance to make the internal business case. Some examples are set out in Box 1.

<sup>16</sup> See <https://www.oecd.org/tax/tax-policy/environmental-tax-profile-mexico.pdf>

<sup>17</sup> Interview with Business representative of the Mexican Chamber of Trade, 14, September 2018



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**Box 1. Case studies relating to improving industrial energy efficiency<sup>18</sup>**

Energy saving opportunities are sometimes overlooked as companies tend to prioritise revenue-generating investments, even though promoting energy efficiency is among the most cost-effective energy saving (and GHG-reducing) measure businesses can take. To address this market failure, the EBRD implemented the Industrial Energy Efficiency Programme, working closely with the large industrial energy users to promote best practice and encourage companies to implement energy efficiency investments<sup>19</sup>.

The key element of EBRD support is the combination of financial and technical assistance. The EBRD team is composed of different specialists, including engineers with the expertise to support energy users to make better-informed decisions by developing and implementing energy saving programs. Once the economically viable projects have been identified a long-term investment program is designed which may then be financed fully or partially by the EBRD. In other words, the combination of technical assistance with long term financial support can accelerate investment in those projects which would otherwise be postponed or never materialise<sup>20</sup>.

Another successful example of public private partnership can be taken from an award-winning project in Speyside, Scotland. In 2014, £74m was raised in support of a new biomass Combined Heat and Power (CHP) plant to produce renewable energy and steam for a local whiskey distillery. The project brought together three sources of investment including £48m debt finance from the UK government and a joint £26m from the Green Investment Bank (GIB) and infrastructure investor John Liang<sup>21</sup>. Construction on the plant completed in 2016 and now produces enough electricity to power over 20,000 homes. At its peak the project employed 120 contractors representing £60m of additional inward investment into the area<sup>22</sup>.

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<sup>18</sup> See <http://www.ebrd.com/downloads/research/factsheets/industriale.pdf>

<sup>19</sup> See <http://www.ebrd.com/downloads/research/factsheets/industriale.pdf>

<sup>20</sup> See <http://www.ebrd.com/downloads/research/factsheets/industriale.pdf>

<sup>21</sup> See <http://greeninvestmentgroup.com/news-and-insights/2014/74m-speyside-green-energy-project-to-power-more-than-20-000-homes-and-provide-heat-for-one-of-the-world-s-most-iconic-whisky-distilleries/>

<sup>22</sup> See <http://speysiderenewableenergy.co.uk/>



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### Capabilities

To add value to the NDB landscape in Mexico, the Green Investment Agency would need to operate at the nexus of public policy, technical assistance for project development and investment. As such, it would need to have capacity to act as both an adviser to government, to help construct market rules and public policy/fiscal support to facilitate the investment needed to deliver Mexico's NDC, and help work with other NDBs and the private sector to turn public policy into a coordinated national financing strategy.

This, in turn, would provide the missing elements needed to address the main market failures, previously identified by E3G<sup>23</sup>, that preclude the delivery of Mexico's NDC. These include a mandate amongst the NDBs, a systematic long-term approach to replace ad hoc inefficient responses and the technical expertise to drive the transition to the low carbon economy. Technical expertise is a key component. As first mover the Green Investment Agency will help create new markets and build confidence in the operational and financial performance of new business models and technologies needed for other investors to follow suit. By having a narrow remit, it can provide adequate support to investors and developers at both the technical and the financial level.

#### **Box 2. URBIS and EFSI – unlocking existing resources to accelerate investments**

A significant focus of recent European Union policymaking has been focussed on maximising the efficacy of existing resources to drive investment to strategic sectors. Two good examples of this leverage approach are URBIS and European Fund for Strategic Investment (EFSI). URBIS is a dedicated urban investment advisory platform within the European Investment Advisory Hub (EIAH), which has been set up “to provide advisory support to urban authorities to facilitate, accelerate and unlock urban investment projects, programmes and platforms”<sup>24</sup>. Key elements of URBIS are raising awareness of existing instruments, programmes, services; tailor-made technical and financial advice to cities, and exploring innovative financing approaches for city investments<sup>25</sup>. These elements help catalysed higher risk investment from existing National Development Banks and the European Investment Bank (EIB) by reducing transaction costs, simplifying access to existing programmes whilst addressing some of the investment gaps in the provision of advisory support.

EFSI is a joint initiative of the EIB and European Commission, focused on overcoming the current investment gap in the EU by mobilising private investment into strategically important areas. EFSI consists of €5bn from the EIB's own balance sheet, leveraged by a €16bn guarantee from the EU budget. It has four core areas

<sup>23</sup> [https://www.e3g.org/docs/BRIEFING\\_PAPER\\_Mexico\\_Dec\\_2017.pdf](https://www.e3g.org/docs/BRIEFING_PAPER_Mexico_Dec_2017.pdf)

<sup>24</sup> See <http://eiah.eib.org/about/initiative-urbis.htm>

<sup>25</sup> Ibid





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of investment: strategic infrastructure; education and research and development; renewable energy and resource efficiency; and SMEs.

Together, URBIS and EFSI provide examples of proven solutions, where a dedicated body takes an overarching approach to maximise the uptake of existing resources whilst suggesting possible innovations to increase efficiency. With a narrow remit, they act as catalysts to help accelerate the low carbon, climate resilient transition in a specific sector of the economy. The Green Investment Agency could provide this kind of support in the Mexican context.

### III. Implementation: creation of a Green Investment Agency in Mexico

The proposed Green Investment Agency could be ‘seeded’ initially via strengthening the role and function of Mexico’s existing Climate Change Fund. This fund is controlled by SEMARNAT and has NAFIN as its fiduciary, meaning it manages the capital but it doesn’t have any decision-making power over how the capital is invested<sup>26</sup>. Towards the end of 2017 the Fund was being restructured to strengthen its ability to address some of the market failures listed above. However, general consensus is this process has not yet gone far enough, creating the opportunity – we believe – to discuss more ambitious approaches such as the Green Investment Agency.

The Climate Change Fund already has an institutional mandate, as set out below, based on the General Climate Change Law, which provides the framework from which a Green Investment Agency can be created:

“...with the aim of capturing and channelling resources public, private, national and international financial to support the implementation of actions to address climate change... the resources of the Fund shall be allocated to projects contributing simultaneously to the mitigation and adaptation to climate change”.

It is usually easier to evolve new institutions rather than build them from scratch. For this reason, it is our view that it would make sense to build a new Green Investment Agency from the foundations of the Climate Change Fund, building up the teams of expertise and financial resources from there. The Climate Change Fund needs to be given the funding to start putting into practice some of the elements set out above, so that in the medium term it can build the track record needed to evolve into the Green Investment Agency described here. In order to do so, it is necessary to change the legislation as the Climate Change Fund is currently prevented from making commercial investments<sup>27</sup>. We propose this be achieved in the following way and focus on four levels of governance: ownership; supervisory board; management team; and independent advisory committee.

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<sup>26</sup> Interview, NAFIN 2/Feb. 2018

<sup>27</sup> Art. 47 de la Ley Orgánica de la Administración Pública Federal



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### Ownership

Ownership of the Green Investment Agency should rest with SEMARNAT as the sole shareholder; the logic behind this is that SEMARNAT already is the department responsible for the Climate Change Fund. However, given the Green Investment Agency will need to serve all parts of the economy, its governance would need to be structured to enable it to operate on arm's length basis and working to support investment across all sectors of the economy<sup>28</sup>.

Achieving this would require changes to be made to the current governance framework of the Climate Change Fund – something that is already being discussed by SEMARNAT. This would have the effect that the Green Investment Agency would become the leading agency managing Mexico's climate-designated funds and coordinating with NDBs managing related funds.

### Supervisory Board

The Green Investment Agency should be run by a Supervisory Board with a senior SEMARNAT representative as Chair. There is no universal agreement on the optimum size of such Boards. A large number of members represents a challenge in terms of using them effectively and/or having any kind of meaningful individual participation; too small and accountability can be lost. However, most boards range from 3 to 31 members and it is suggested the Green Investment Agency aim for 15 members be selected from the following groups.

- Chief Executive Officer of the Green Investment Agency;
- **Five** representatives drawn from the existing members of the Intersecretarial Committee for Climate Change (ICCC) which already includes membership of 14 Ministries<sup>29</sup>. The ICCC is chaired by the Head of the Secretariat of Interior, who could delegate to SEMARNAT if necessary. The ICCC has been designed to promote the coordination of climate change actions among dependencies and entities of the Federal Public Administration. These seats could be allocated on a rolling 4-year basis;
- One representative each of the **five** most relevant NDBs: NAFIN, Banobras, Bancomext, FND, and SHF<sup>30</sup>.
- **One** representative of an independent environmental group;

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<sup>28</sup> In the UK, BEIS was the sole shareholder of the Green Investment Bank see <https://www.nao.org.uk/wp-content/uploads/2017/12/The-Green-Investment-Bank.pdf>

<sup>29</sup> Ministry of Interior, Ministry of Foreign Affairs, Ministry of Marine, Ministry of Economy, Ministry of agriculture, Rural Development and Fisheries, Ministry of Communications and Transport, Ministry of Education, Ministry of Health, Ministry of Tourism, Ministry of Agrarian Urban and Territorial Development, Ministry of Social Development, SEMARNAT, SENER and SHCP

<sup>30</sup> There are other NDBs, but their targets are on saving and financial inclusion (BANSEFI) and the Mexican army (Banjercito)



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- **Three** private sector members that are primarily be experienced commercial operators but with demonstrable experience and/or interest in delivering Mexico's NDC and with experience in corporate investment; commercial banking; fund management; economic analysis and forecasting; and environmental policy, particularly in relation to climate change mitigation and adaptation.

The Supervisory Board will be responsible for overall management of the Green Investment Agency, including the formulation and revision of strategy, and overseeing the implementation of that strategy. This will include responsibilities such as the signing off annual reports and accounts. The Board will also be responsible for ensuring that the Green Investment Agency complies with the requirements of that set out in its mandate.

This suggested composition of the Board would enable the Green Investment Agency to act as a knowledge hub and leverage its member's existing networks. In addition, it would ensure that the widest possible real economy context is considered when determining how to develop a national financing strategy that best addresses Mexico's climate change investment needs; also, wider interrelated issues such as urban migration and health issues.

#### **Management team**

The Green Investment Agency should be set up as a nimble institution, with a head count of no more than 50 people to start with<sup>31</sup>. The management team would have day-to-day responsibility for managing operations. Specific executive powers should be delegated to them with and by authority of the Supervisory Board and/or the shareholder. The management team will include the Chief Executive Officer, the Chief Financial Officer, the Chief Operating Officer, and the Chief Strategy Officer. Day to day responsibilities will include:

- ensuring the Green Investment Agency is effective and successful by taking on responsibility for the implementation of its mandate and delivery of its strategy to achieve that mandate;
- effectively managing the demands of stakeholders, many of which make up its Board;
- giving clear definitions of what constitutes effectiveness and success in operations – with a focus on providing additionality to the crowded NDB landscape in Mexico;
- ensuring the implementation of the strategy and the targeting of resources towards success – including a focus on leveraging national public funds with international public and private investment into Mexico's low carbon and climate-resilient infrastructure;
- reviewing their actions to ensure they are relevant and impactful to achieving the organization's overall goals.

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<sup>31</sup> The GIB started with 100 employees and by 2016 it had 130 employees. The grow should be organic depending on the needs.



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### Independent Advisory Committee

The Independent Advisory Committee would act as the Agency's 'conscience': its role would be to provide advice and recommendations to the Agency on environmental and other matters, and to hold the Agency to its public interest objectives. It would be constituted with relevant scientific, policy and markets expertise in the environmental field; governmental representatives; and a member of the Supervisory Board.

The IAC would take input from INECC on sector priorities and estimates of the required investment, and feed this into the Supervisory Board of the GIA. It would be at the discretion of the GIA board to act on these recommendations. However, this mechanism would enforce accountability; if the GIA board did not act on the IAC's recommendations they would need to justify their reasons.

By adding the IAC to the structure of the GIA, Mexico would be setting higher standards and leadership in terms of public accountability whilst maximizing the GIA's contributions to the low carbon economy.

### Financial provisions

The Green Investment Agency will need to be capitalised at a scale fit to enable it to address the current and future capacity gaps faced by Mexico. Green Investment Banks created in recent years have been endowed with several billion US\$. For example, in 2012 Australia's Clean Energy Finance Corporation (CEFC) was endowed with US\$ 1.52bn over 5 years from the Australian Government, by 2017 the CEFC was capitalised with US\$ 7.6bn<sup>32</sup>. In the UK, the Green Investment Bank was capitalised with US\$ 3.9bn from the UK Government in 2012<sup>3334</sup>.

The key to these determining the 'right' level of capitalisation is to signal serious political intent and support for the institutions to deliver its mandate. As Table 1 sets out, depending on the source it is estimated that between US\$ 136-791bn needs to be invested to deliver Mexico's NDC. As an approximate calculation, taking the average of the two estimates gives an average annual spending requirement of US\$30bn.

Assuming that the GIA is only involved in providing finance to 10% of the projects required to meet Mexico's NDCs, and contributes 20% of the capital needed for each project which it does finance<sup>35</sup>, would yield an initial annual budget requirement of US\$ 0.62bn. This appears to be plausible to fund when compared to the estimated

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<sup>32</sup> See <https://greenbanknetwork.org/australia-clean-energy-finance-corporation/>

<sup>33</sup> Green Investment Group (2017). Annual Reports and Financial Statements 2016-2017. <http://greeninvestmentgroup.com/media/185901/gib-annual-report-2016-17-final.pdf>

<sup>34</sup> Vías para Establecer y Capitalizar un Banco de Inversión Verde Natural Resources Defense Council (NRDC), Coalition for Green Capital (CGC) y Climate Finance Advisors (CFA), May 2017 and <http://www.bbc.co.uk/news/business-33263710>

<sup>35</sup> For comparison the UK GIB, in the first year of its operations committed 22% of the total costs of project it was involved in.

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total revenues generated by Mexico’s carbon tax, which amounted to US\$ 1.2bn between 2014-2015<sup>36</sup>. This is a relatively modest level of start-up funding: for comparison NAFIN’s outstanding loan portfolio is in the region of US\$ 11bn.

Table 1. Estimates of Mexico NDC investment needs to 2030

Estimate source	Period	Amount
Energy	Yearly	US\$ 5bn <sup>37</sup>
INECC Estimate	2016-2030	US\$ 136bn
IFC Estimate	2016-2030	US\$ 791bn

Start-up funding could be drawn from the following four sources:

The public budget: The Green Investment Agency could be set up by following the example of the UK Green Investment Bank, with initial funding sourced from the national budget. However, at a time when public finances are tight, this may be a difficult option to deliver. Another option could be through the issuance of a Sovereign Green Bond with the proceeds ring-fenced and used to capitalise the Green Investment Agency. The World Bank could provide technical assistance to support this process<sup>38</sup>, and the bond could be benchmarked against other green bond issuances globally, e.g. Hong Kong, France, Poland and Fiji. This would also send a signal to global investors that Mexico is serious about achieving the transition to a low carbon economy.

Carbon Tax: Potentially easier to justify than an endowment from central government funds, the Ministry of Finance could ring fence carbon tax receipts and channel the funds to Green Investment Agency. While Mexico’s carbon tax is one of the lowest in the world at US\$ 3.50/tCO<sub>2</sub>, it is expected to generate revenue streams equal to US\$ 1bn per year<sup>39</sup>. This would follow a similar model used by Japan’s Green Finance Organization<sup>40</sup>

Green Climate Fund and International Donors: The Green Investment Agency could also set itself up to secure funding from the Green Climate Fund. This would require the Green Investment Agency to become an accredited agency of the Green Climate Fund. Another international source of funding would be via the UK Government’s Sustainable Infrastructure Programme, which provides technical assistance to accelerate the delivery of NDCs and has Mexico in its remit. This would not only provide start-up capital to the Agency but also send a strong signal to international

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<sup>36</sup> See e <https://www.thepmr.org/system/files/documents/5.%20Carlos%20Munoz%20Pina.pdf>

<sup>37</sup> PWC, CESPEDDES (2015). **Estudio sobre las inversiones necesarias para que México cumpla con sus metas de Energías Limpias**

<sup>38</sup> It supports the Federal reserve of Fiji to issue its First Sovereign Green Bond.

<sup>39</sup> See <http://www.wri.org/blog/2017/04/mexicos-3-big-steps-towards-comprehensive-carbon-pricing>

<sup>40</sup> This was capitalized by a portion of revenue from a carbon tax established in 2012 on fossil fuel consumption. See <https://greenbanknetwork.org/green-finance-organisation-japan/>

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donors that Mexico is stepping up its institutional capacity to deliver on its climate commitments.

Public borrowing through issuing green bonds: With significant capitalisation – and a track record of good investment decisions – the Agency could potentially start to borrow from capital markets. This would require either an implicit or explicit guarantee from the Mexican Government – something that may need to be written into the legislation of the Agency. The ability to borrow would demonstrate serious commitment by the Mexican government to scale up the Agency’s activities as well as enabling it to borrow money at the lowest possible cost. With the Green Investment Agency focused on solely delivering low carbon and climate resilient investment, it could become a major new issuer of green bonds – something in which Mexico is becoming increasingly active, with US\$6.1bn issued to date – US\$4.0bn was a single operation done by Mexico City Airport, the largest in Latin America to date<sup>41</sup>.

The right mix of funding sources should be determined by Hacienda in conjunction with SEMARNAT and INECC. **There is a strong case to be made that Mexico should actively boost the low carbon transition process by using a proportion of the old economy (the royalties from oil and gas auction<sup>42</sup>) to invest into the development of the new economy;** a good example is Saudi Arabia’s active encouragement of solar energy as a successor to oil. As such, decisions should take into account the long-term social and environmental benefits that would result from the creation of an at scale Green Investment Agency.

Figure 1 presents an overview of how the funds raised for initial capitalisation of the Green Investment Agency could be used to leverage private capital to support the low carbon and climate-resilient investment needed to deliver Mexico’s NDC.

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<sup>41</sup> Climate Bonds Initiative (2017). Green Bond Highlights 2017

<sup>42</sup> It is expected to generate a total of USD100BN in private investment for the country, since 2014 until 2018. See <https://www.eleconomista.com.mx/empresas/Reforma-energetica-atrae-100000-mdd-en-inversion-20180109-0065.html>

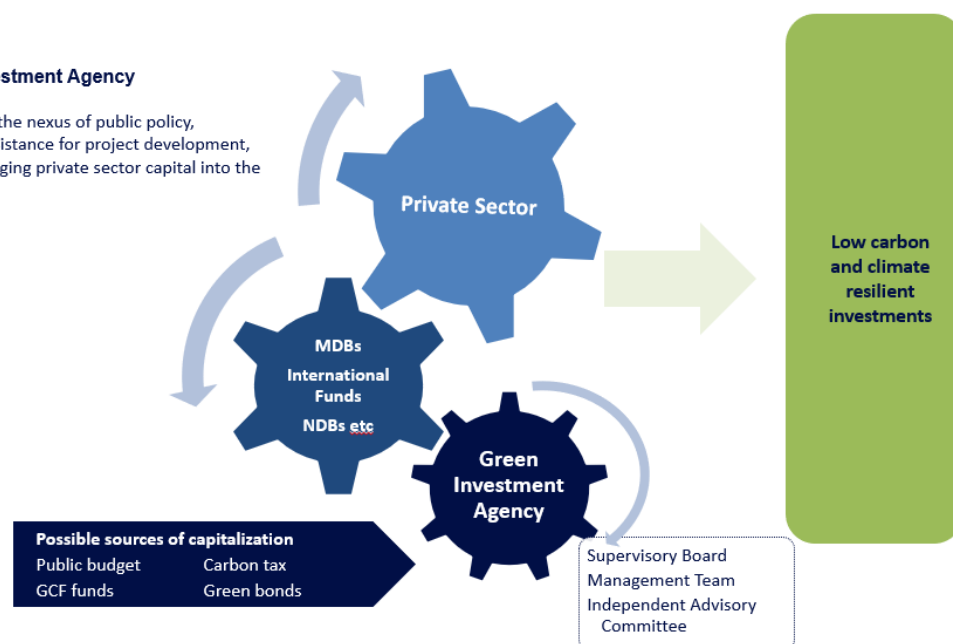


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Figure 1. Green Investment Agency

### Green Investment Agency

Operates at the nexus of public policy, technical assistance for project development, whilst leveraging private sector capital into the sector.



Source: authors' depiction

### Timing

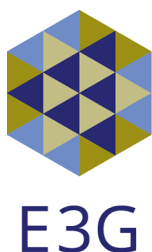
2018 is an important year for two reasons. It is the year of Mexico's Presidential election and the year when global climate ambition needs to be ratcheted up. The latter makes this year the ideal window of opportunity to convene the "Facilitative Dialogue" designed to inform the next stage of NDC development; Mexico will need to communicate or update its 2030 targets by 2020<sup>43</sup>. Therefore, it is important to have a strategy on how the targets are going to be achieved and the GIA should be part of a broader National Climate Finance Strategy.

### Short term 0-2 years: Transition

In the first two-year period, the role of the Climate Change Fund should be enhanced. This would be a trial period to establish 'proof of concept' for the establishment of a more permanent Agency. The focus of the investments should be prioritised according to the INECC's projections and a monitoring and evaluation reporting system should be designed following international best practice – for example as set out by the UK's Green Investment Bank.

To enable this to happen it will be necessary to provide the Climate Change Fund with increased, sustained and predictable funding. Revenue coming from the carbon tax could be ring-fenced and steps taken to secure additional funding from international donors. Utilising these sources of funding could lessen the fiscal burden on government revenues. An application for direct funding from the GCF to set up the

<sup>43</sup> See <https://www.carbonbrief.org/timeline-the-paris-agreements-ratchet-mechanism>



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Green Investment Agency should also be considered. Given that the process takes at least 6 months after documentation is received by the GCF<sup>44</sup>, the Climate Change Fund should aim to do this by early 2019. An application for support from the UK Government should be undertaken by the end of 2018 to provide technical assistance to facilitate the application for GCF accreditation.

Furthermore, it would be advisable for the Climate Change Fund to liaise with other green investment banks, e.g. using the existing Memorandum of Understanding which NAFIN (the fiduciary of the Climate Change Fund) already has with the Green Investment Group. This could be an opportunity to share knowledge and expertise and build necessary relationships.

Assuming the GCF approves the Climate Change Fund as an accredited entity, **by the end of year 2 GCF funds could be used to capitalise the Climate Change Fund and complete its transformation to the GIA.**

#### Medium Term 0-4 years: Establishment

With a track record of successful investment built, the GIA would be able to kick start a self-sustaining programme of supporting Mexico and its institutions to accelerate the transition to a low carbon economy. By 2020, when presenting the new NDC commitment Mexico could include a National Finance Strategy, supported by the Green Investment Agency working together with INECC on sector priorities.

To allow the GIA to fulfil this role, the General Climate Change Law will need to be amended to enable the role of the GIA (Climate Change Fund) to evolve, moving its mandate from capturing and channelling resources to give it a wider remit to catalyse private investment into delivering Mexico's low carbon transition.

The aim would be that by the end of Year 4 the GIA would be well enough established to operationalise its guarantee from the Mexican Government and enable it to borrow from the capital markets<sup>45</sup>.

#### Year 4 onwards: Full operation

By year five at the latest, the GIA should demonstrate that it is effective at channelling resources to underfunded sectors whilst demonstrating additionality and added value - both narrowly in terms of leveraging the private sector financing and more broadly by enhancing coordination amongst the existing development bank and policy makers. As GIA activities expand it may prove necessary to introduce a specialised provision for certain sectors of the low carbon economy. For example, the GIA may create funds which provide a platform for institutional investors to participate in long term infrastructure investments; the fund can reduce the perceived risks of the

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<sup>44</sup> See <https://www.greenclimate.fund/gcf101/getting-accredited/accreditation-process#faq-how-long-does-accreditation-take>

<sup>45</sup> The World Bank has provided previous support to Mexico to issue green and catastrophic bonds





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investment and circumvent restrictions on direct infrastructure investment. The focus of the fund could be determined by the priorities established by INECC.

Once the GIA has established its track record, it could act as a trailblazer for other Latin American countries. As well as enhancing Mexico's position as a climate leader and cementing a green finance hub in Mexico, it could also act as a centre for knowledge sharing amongst other Latin American countries.

**Box 3. Boosting energy efficiency investment into housing**

Sociedad Hipotecaria Federal (SHF) is a national development bank, a second-tier bank with the mandate to encourage the development of the country's mortgage loan market by granting funds and guarantees for the construction, acquisition and improvement of housing units. Since 2013, SHF has run its EcoCasa Programme in partnership with KfW Bankengruppe and with co-financing from the Clean Technology Fund and the Inter-American Development Bank, which provides concessional bridge loans. The program goal is to contribute Mexico's efforts to reduce GHGs from the residential sector. SHF provides concessional loans, technical assistance and subsidized guarantees to housing developers to build energy efficient housing.

By the end of December 2017, EcoCasa had financed 44,034 projects and certified 9,005 energy efficient housing units mitigating more than 1.5 million tons of CO<sub>2</sub>, with positive impacts on the lives of more than 200,000 Mexicans.

However, the programme itself hasn't been able to address wider market failures to boosting the efficiency of all Mexican buildings. These include lack of incentives to provide and take up loans; increased awareness of opportunities and expertise to deliver solutions with the developer community. With a Green Investment Agency in place it could (i) coordinate and channel continued support for this programme and (ii) drawn out lesson learned on how to scale up energy efficiency investment into Mexico's forward policy processes.



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## IV. Conclusion

Shifting Mexico to a low carbon and resilient economy represents a huge investment challenge – but also an unprecedented economic opportunity. The investment required to replace and decarbonise Mexico’s infrastructure and technology base also represents opportunities for new wealth creation and jobs as well as delivery of energy security and future global competitiveness.

However, Mexico’s current growth trajectory means that meeting its NDCs by 2021 will be difficult, especially for the transport and energy sectors. Institutional innovation to accelerate Mexico’s transition through coordinating existing agencies to have an impact greater than the sum of their parts is a key means to do this.

A new dedicated Green Investment Agency, as set out here, could fulfil these functions and turn the challenges posed by climate change into opportunities. 2018 is a key moment to do this: **the incoming Mexican President and government should adopt the creation of the Green Investment Agency as a cornerstone policy of a bold new domestic sustainable investment programme.** By breaking down the barriers to this transition, the Green Investment Agency could catalyse private investment and financial innovation and thereby reduce the longer-term fiscal burden. **These actions would also position Mexico as climate leaders at the forefront of the global transition in the year when global climate ambition needs to be ratcheted up.** As such it would provide an inspiring model for others regionally and globally to follow.



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### About E3G

E3G is an independent climate change think tank operating to accelerate the global transition to a low carbon economy. E3G builds cross-sectoral coalitions to achieve carefully defined outcomes, chosen for their capacity to leverage change. E3G works closely with like-minded partners in government, politics, business, civil society, science, the media, public interest foundations and elsewhere. In 2016, E3G was ranked the number one environmental think tank in the UK.

More information is available at [www.e3g.org](http://www.e3g.org)

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