WWF

REPORT

2014

THIS REPORT HAS BEEN PRODUCED IN COLLABORATION WITH

8%+

PRIVATE SECTOR AND LOW-CARBON GROWTH IN MEXICO

With the technical support of pwc

FOREWORDS

Luis Farías, Chairman, Business Council for Sustainable Development - Mexico (CESPEDES)

This project stems from the voluntary participation of the business sector in mitigating greenhouse gases in Mexico.

In this sense, 185 registered renewable energy and cogeneration projects stand out, with an investment of US$ 7.8 billion[1] and a potential of 4,580 MW, which would represent a reduction of 26 $MtCO_2$ per year; and the modernization of technology in energy-intensive industries, both at the production and the commercial level. These projects are at different stages of development and many of those that have not been implemented yet, require the removal of regulatory, institutional and financial barriers. This report identifies the most relevant of such barriers.

Being able to competitively substitute imported goods from countries with higher carbon emissions would benefit competitiveness, investment and employment in the country. Also, being able to replace imported products such as wood and paper, with products from domestic sustainable forestry projects would reduce CO_2 emissions.

We are certain that with the appropriate conditions, the private sector may lead these efforts and contribute to making Mexico a more competitive, fair and sustainable country.

1 Investments in renewable energy could multiply if the electric sector reform is effectively implemented.

8%+

Omar Vidal, Director General, WWF-Mexico

Climate change is one of the biggest challenges of our time, not only does it have an impact on natural resources, but also on the social and economic development of all nations. In Mexico, the devastation left by hurricanes “Manuel” and “Ingrid” in 2013 should mark a turning point in the efforts to implement comprehensive and multi-sector strategies to adapt to climate change, and for the country to maintain its global leadership in the greenhouse emissions reduction efforts.

According to the latest estimates of the United Nations Intergovernmental Panel on Climate Change (IPCC), we have a decade – the present one – to change the trends that would lead us to unmanageable changes. Mexico has positioned itself in the global arena as a progressive player and a contributor of innovative solutions to address this challenge.

This report seeks to add to this vision through the key role that private sector can play. WWF has worked with the business sector globally for over 20 years through strategic conservation and sustainability partnerships with leading companies that have proven the close relationship between efficiency and competitiveness.

With analyses and figures, this report confirms the possibility and the opportunity of a low carbon development. Its results shed light on the greenhouse gases mitigation targets of Mexico, showing the transformational potential of the private sector. Developed with technical support from PwC, this report is the result of the collaboration between WWF and CESPEDES. We trust it will mark the beginning of a fruitful and long-lasting relationship with the private sector in order to address some of the main environmental challenges that Mexico faces.

The implementation of the 16 cost-competitive mitigation measures identified in this study would require an investment of US$ 18 billion* from the private sector and decisive actions from the government. Taking advantage of these opportunities would translate in a net private economic benefit of US$ 6 billion in 2020 and a cumulative net private benefit of US$ 23 billion in the 2014-2020 period. This cumulative amount is equivalent to 8% of Mexico GDP growth over the last decade.

* Excluding investments in power transmission and natural gas transportation and distribution.

INTRODUCTION

According to the IPCC, human activities based on fossil fuels burning and land-use change are the main causes of the global warming experienced since 1950.

Mexico, being the 14th largest economy in the world, has greenhouse gases emissions (GHG) of 748 $MtCO_2$ per year that account for 1.5% of global emissions. The country occupies the 12th place in total emissions in the world, and ranks 92nd in per capita emissions. At the same time, Mexico is one of the most vulnerable countries to climate change and to hydro-meteorological events such as hurricanes, floods and droughts, due to its geographical location, orography and the low social and economic development affecting a large part of the population. The challenge for Mexico is to achieve economic growth, reduce poverty and improve welfare levels, while transitioning to a less carbon-intensive economy.

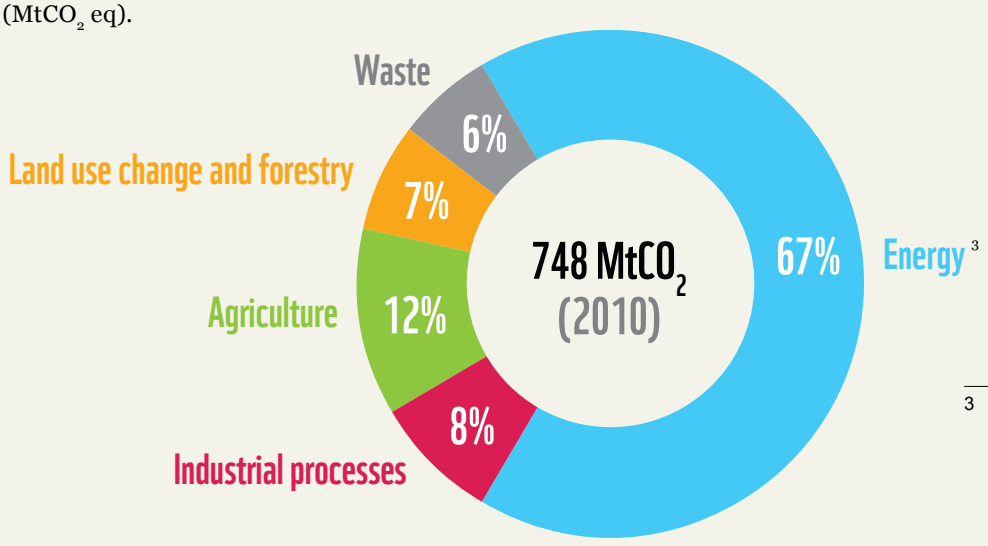
Mexico pledged to reduce GHG emissions by 30% below business-as-usual by 2020 subject to international funding mechanisms and technology transfer. Those commitments were reflected in the General Law on Climate Change and the National Climate Change Strategy.

This study identifies the potential of the private sector to contribute to the mitigation efforts in the country through cost-competitive measures. It also identifies the main barriers for the implementation of such measures and suggests action lines to remove them. The sectors analyzed include: energy[2] (electricity and oil), mining, chemicals, steel, glass, food, paper and consumer goods.

2 The energy sector covers only the potential in which the private sector has ownership.

RESULTS / STARTING POINT

According to the National Emissions Inventory, in 2010 Mexico produced 748 mega tonnes of equivalent carbon ($MtCO_2$ eq).

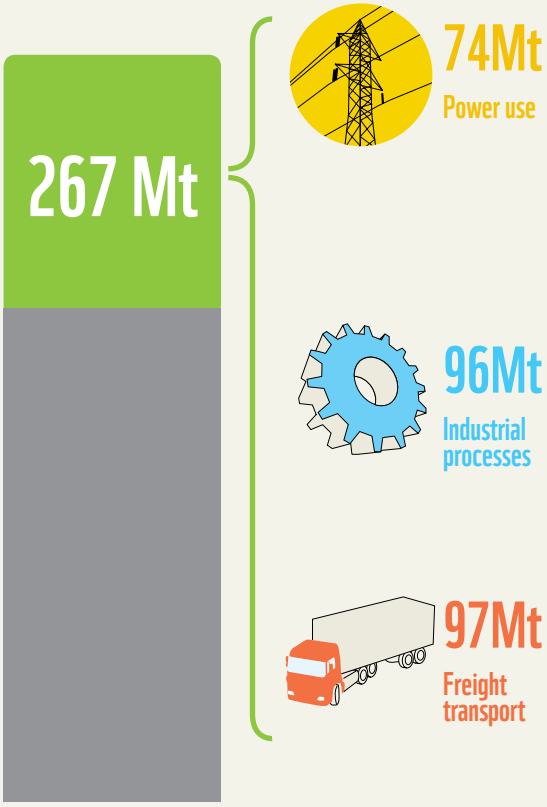


3 Fugitive fuel emissions are contemplated, as well as any emissions from fossil fuel consumption including power generation, refining and transportation.

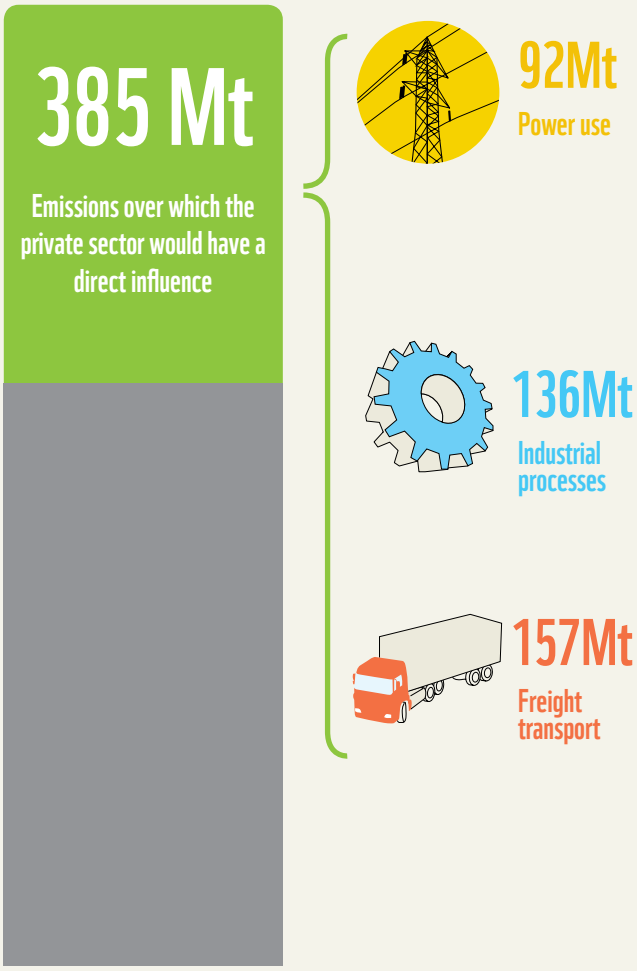
RESULTS / SCOPE

Out of the 748 $MtCO_2$ eq, the private sector has a direct link to one third of the GHG emissions generated in the country, due to the generation and consumption of energy, the direct emissions in industrial processes and the emissions related to the transportation of goods and merchandises.

2010
748 Mt GHG emissions in Mexico



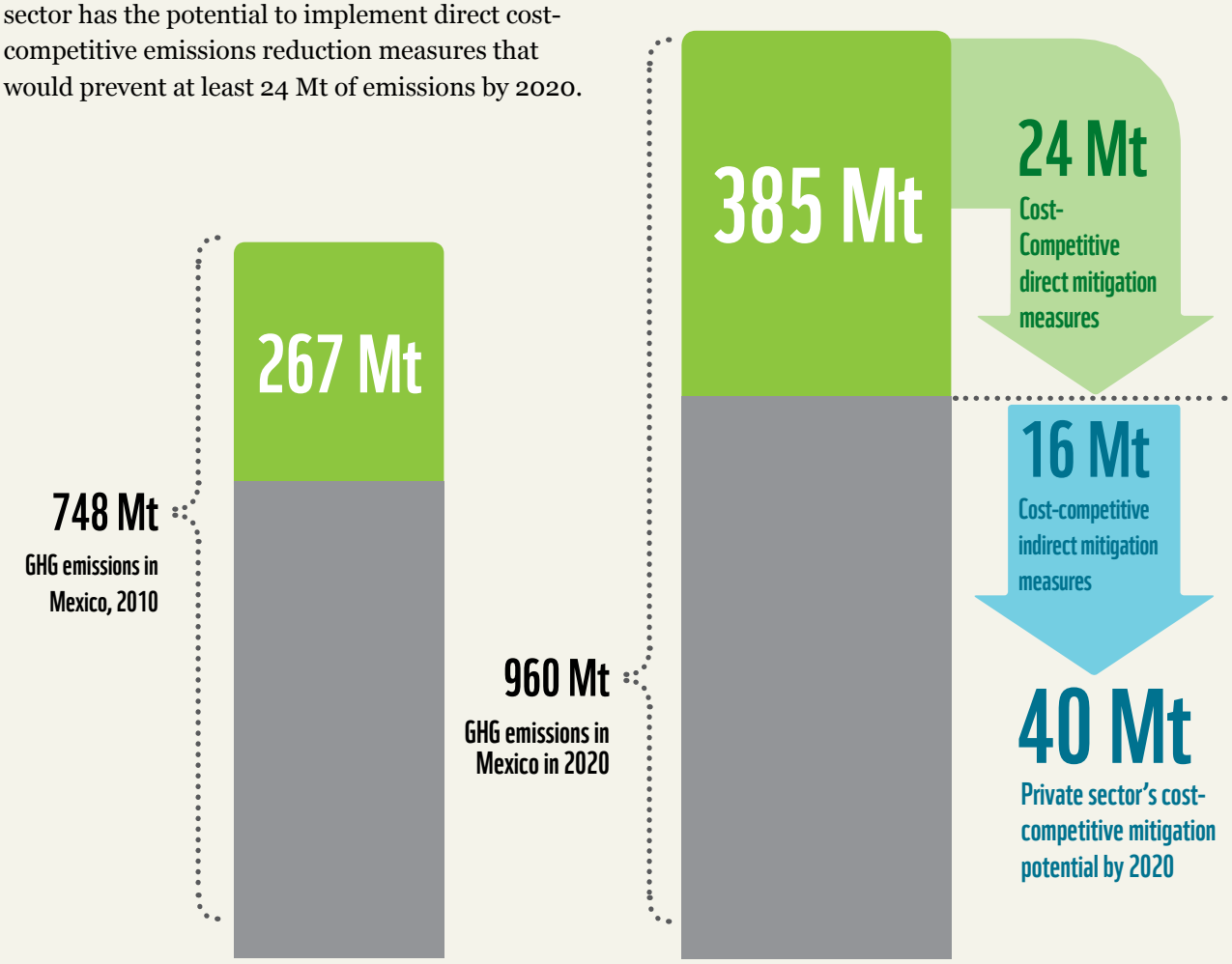
2020
960 Mt GHG emissions in Mexico



According to the emissions growth projections for Mexico, by 2020 the private sector could have a direct influence on 385 Mt, equivalent to 40% of total emissions.

RESULTS / POTENTIAL

In a low-carbon growth scenario, the private sector has the potential to implement direct cost-competitive emissions reduction measures that would prevent at least 24 Mt of emissions by 2020.



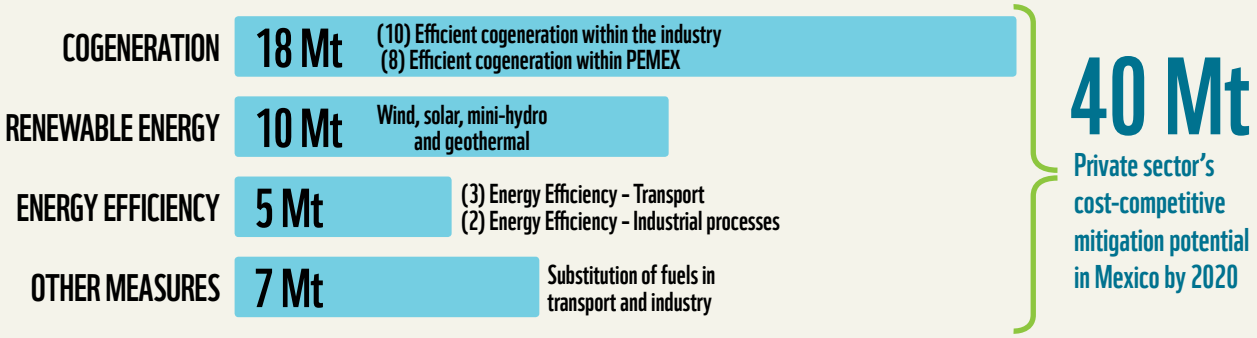
Furthermore, with appropriate conditions, the private sector could help reduce 16 Mt of additional emissions within power generation and refining sectors through cost-effective mitigation measures.

To implement most of these measures it is essential that investment is envisaged to expand the electric transmission networks and sustainably planned energy infrastructure to supply natural gas.

There are other measures which could be promoted by the industry, such as sustainable commercial forestry that would mitigate up to 4.5 $MtCO_2$ eq, as well as cogeneration in sugar mills that would mitigate around 3.6 $MtCO_2$ eq by 2020.

RESULTS / MEASURES

Measures associated with efficient cogeneration (45%) and renewable energy (25%) are the ones with the greatest potential.



INVESTMENTS AND NET BENEFITS BY CATEGORY OF MEASURES

	Cogeneration	Renewable Energy	Energy Efficiency	Other measures	Total
Cumulative investment 2014-2020 (billions USD)	6.3	8.4	1.1	1.9	18
Cumulative net economic benefits [4] 2014-2020 (billions USD)	4.7	1	6.2	11.4	23

4 These amounts already show the difference between expected revenues and savings minus investment.

LIST OF IDENTIFIED MEASURES AND POTENTIAL BY 2020

Name of the measure	Potential 2020	Relevance in mitigation
1 CHP in industry [1]	• 2.6 GW of demand with CHP	
2 CHP in PEMEX [2]	• 3.1 GW of demand with CHP	
3 Wind Power [2]	• Installation of 12 GW	
4 Training in efficient professional driving	• Training 20% of drivers	
5 Replacing engines for efficient ones	• An 80% penetration of efficient engines	
6 Geothermal [2]	• Installation of 1.3 GW	
7 Participation in freight rail transport	• 10% of the freight transported by train	
8 Hydraulic power [2]	• Installation of 1.8 GW	
9 Replacement of liquefied petroleum gas (LPG)	• Replacing 80% of LPG	
10 Use of natural gas (NG) in freight transport	• 5% of consumption covered by NG	
11 Substitution of fuel oil	• Replacing 80% of fuel oil	
12 Solar PV in self-supply	• 20% of consumption supplied by PV	
13 Efficient lighting	• 80% covered by efficient lighting systems	
14 Efficient cooling	• 80% of the consumption in efficient cooling	
15 Use of compressed NG in machinery	• Substitution of 70% of diesel for compressed NG	
16 Efficiency of boilers	• A 45% penetration of efficient boilers	

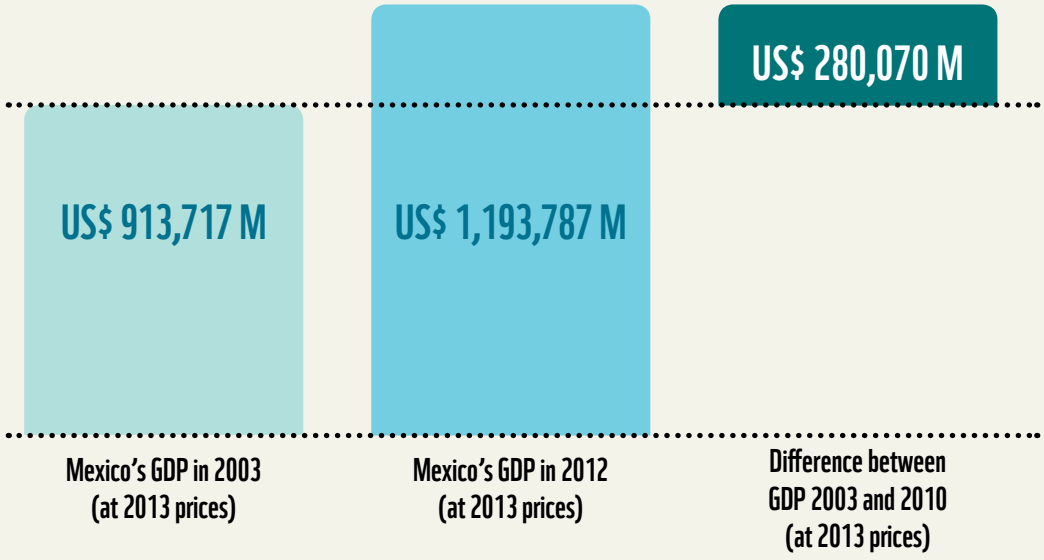
NOTE: other measures considered include sustainable commercial plantations, CHP in sugar mills as well as actions in other industries.

1) CHP = Combined Heat and Power

2) Includes measures on emissions not directly associated with the private sector, but where it could participate (e.g. renewable energy generation plants to provide electricity for public service).

RESULTS / BENEFITS

The identified mitigation measures would require an estimated US$ 18 billion[5] in private sector investments, and the decisive action by the government. Taking advantage of these opportunities would result in a private net economic benefit of US$ 6 billion in 2020 and a cumulative private net economic benefit of US$ 23 billion from 2014-2020.



5 Excluding investments in power transmission and natural gas transportation and distribution.

8%

Percentage equivalence of the difference between 2003 and 2010 GDP

US$ 23 BN

Cumulative private net economic benefit between 2014-2020

The cumulative economic benefits between 2014 and 2020 would equal an 8% of the GDP growth over the last decade

BARRIERS / PROPOSED ACTION LINES

In order to reach the identified potential it is recommended to implement actions to remove the barriers that limit private investments in cost-competitive measures

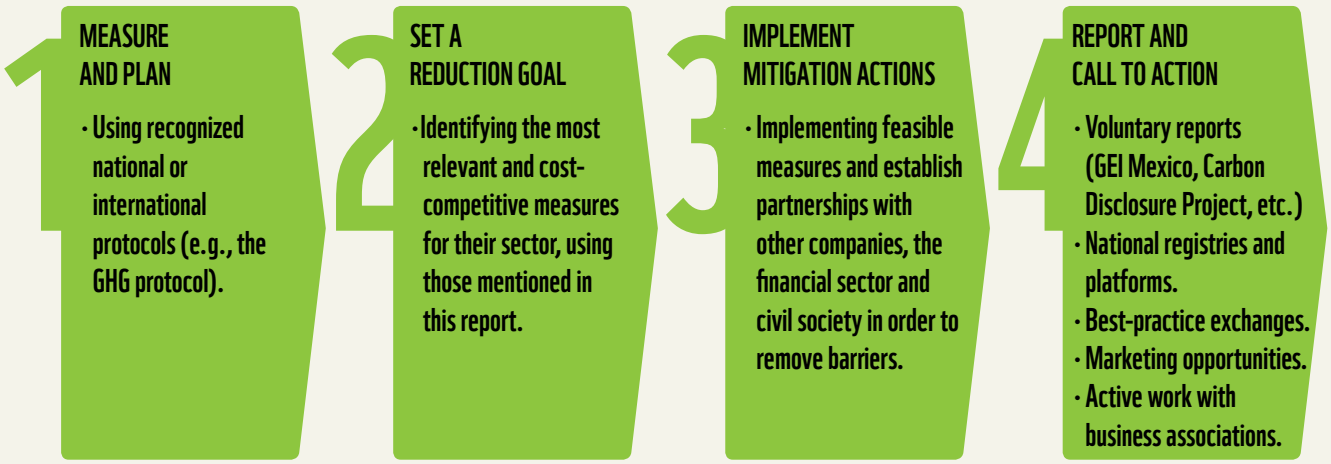
	Agency	Action Lines	Barriers	Benefited measures
Regulatory	Finance	Generate a carbon credits market in which consumers can prove their consumption and associated mitigation.	Lack of a mechanism to encourage emissions mitigation.	All
		Extend the accelerated depreciation incentive and a zero rate to energy efficient equipment, as is done with renewable energy	Lack of equitable treatment between the energy efficiency (EE) and the renewable energy (RE) measures.	5, 13, 14, 16
		Remove surplus contributions from the commercial and industrial rates to the rest of the system.	Uncertainty regarding prices of energies not aligned to the market.	1, 2, 3, 6, 8, 12
		Remove fossil fuels subsidies and invest those resources into low emissions public infrastructure.	Fossil fuel prices below their actual cost.	9, 10, 15, others
	Energy	Give visibility to the annual targets of new renewable capacity to reach the goal of 35%. For this, it is essential that the new programming of the Energy Ministry and the Federal Electricity Commission introduce a gradual growth path. Accelerate the deployment of sustainable renewable projects held back by regulatory barriers.	Unclear annual targets for renewable capacity.	1, 2, 3, 6, 8 and 12
		Ensure a predictable and competitive value for surplus energy generated by cogeneration. Review the application of the energy reference price.	Limited access to natural gas infrastructure.	1 and 2
		Ensure access to gas pipeline infrastructure to achieve substitution of fuels in industry, in order to develop cogeneration and the penetration of natural gas in the transport sector.	Limited access to natural gas infrastructure.	1, 2, 9, 10, 11, 15 and others
		Accelerate the updating of energy efficiency standards. Stop imports of inefficient and highly polluting products.	Insufficient scope of current efficiency standards.	4, 5, 7, 10, 13, 14, 16 and others
		Set clear rules for gas and electricity system operators, taking into account the advice of relevant stakeholders, and fostering a fair, competitive and transparent market.	Uncertainty about future operating mechanisms in the gas and electricity markets following the energy reform.	1, 2, 3, 6, 8, 9, 10, 11, 12, 15 and 16
		Annually publish the official weighted value of carbon emissions per MWh of electricity generated so that companies can account for their indirect emissions.	Lack of knowledge of the national electricity system's emissions factor, complicating GHG emissions accounting.	1, 2, 3, 5, 6, 8, 12, 13 and 14
	Environment	Strengthening and streamlining of the environmental impact assessments. Review regulatory framework in order to give certainty to investors over time, on sustainable commercial plantation projects.	Long response times in environmental impact assessments. Lack of legal certainty and monitoring while reforesting.	Others

	Agency	Action Lines	Barriers	Benefited measures
Regulatory	Transport	Promote the expansion, maintenance and modernization of the railway network and freight trains, and the competitiveness of railway rates.	Insufficient railway infrastructure.	7
	Land-use, agriculture and local governments	Standardization and legal certainty in land-use.	Lack of certainty and standardization in land-use.	3, 6, 8 and others
Financial	Finance	Expand guarantees and special credit programs from development banks for sustainable projects, working in cooperation with private banks.	Lack of financial resources.	All
		Develop policies that establish financial support mechanisms through development and commercial banks to mitigate risk in small-scale electricity consumers.	Difficulty in financing renewable energy projects which have SMEs as final customers.	1, 2, 3, 8, 12 and others
		Provide financing for EE improvements that will be repaid by customers thanks to projects' profitability.	Unbalanced competition between EE projects and other investment opportunities.	All
	Energy	Allocate power sector funds to promote energy efficiency measures in SMEs.	Lack of funding allocated for EE.	4, 12, 13 and 14
Capacities, Communication, Social and Political Processes	Energy	Conduct public-private training courses, to prepare human resources with technical and financial capabilities for the development of renewable energy and energy efficiency projects.	Lack of skilled human resources	All
		Improve communication to the private sector on the benefits and current public programs to support EE actions, in order to boost the sector's participation.	Insufficient dissemination of economic benefits of EE.	All
		Promote the implementation of EE actions in government buildings and public facilities, as well as communicating and disseminating outcomes in order to encourage private investment in EE.	Lack of exemplary promotion of efficient government buildings.	8, 12 and 13
		Ensure access to gas pipeline infrastructure to achieve substitution of fuels in industry, in order to develop cogeneration and the penetration of natural gas in the transport sector. Ensure natural gas supply through new infrastructure projects in transmission and distribution. Where critical conditions of gas supply are anticipated, mandate the sustainable and planned expansion of pipeline infrastructure.	Limited access to natural gas infrastructure.	9, 10, 11 and 15
	Interior	Strengthen social security and local community organization. Certainty regarding the "right of way".	Lack of legal certainty in land-use and social conflicts in certain regions.	Others

Benefited measures

1 CHP in industry
2 CHP in PEMEX
3 Wind power
4 Training in efficient professional driving
5 Replacing engines for efficient ones
6 Geothermal
7 Participation of rail transport
8 Hydraulic power
9 Substitution of liquefied petroleum gas (LPG)
10 Use of natural gas (NG) in freight transport
11 Substitution of fuel oil
12 Solar PV in self-supply
13 Efficient lighting
14 Efficient cooling
15 Use of compressed NG in machinery
16 Efficiency of boilers
OTHER: sustainable commercial plantations, CHP in sugar mills as well as actions in other industries.

4 STEPS COMPANIES CAN TAKE IN ORDER TO REDUCE THEIR EMISSIONS



Source: Developed from A roadmap to corporate GHG programs, EDF 2010.

8%+

Implementing the 16 cost-competitive mitigation measures identified in this study would require a private investment of approximately US$ 18 billion[6] and the decided action by the government. Taking advantage of these opportunities would translate into a net private economic benefit of US$ 6 billion in 2020 and a cumulative private economic benefit of US$ 23 billion in 2014-2020; that is, equivalent to an 8% of the GDP growth over the last decade.

6 Excluding investments in power transmission and natural gas transportation and distribution.

WWF

WWF is one of the world's largest and most experienced independent conservation organisations, with over 5 million supporters and a global network active in more than 100 countries. WWF's mission is stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

www.wwf.org.mx

CESPEDES

CESPEDES is a member of the Business Coordination Council (CCE). Its main duty is to identify strategic positions and specific solutions to support the design of policies that promote economic growth and competitiveness of the business sector and of Mexico. CESPEDES is Mexico´s representative at the World Business Council for Sustainable Development, it seeks to support the creation of a legal and administrative framework that promotes sustainable development, to create economic value for businesses, and to provide leadership to create a sustainable development culture within the private sector.

www.cce.org.mx/cespedes

Contributors
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8%+ PRIVATE SECTOR AND LOW-CARBON GROWTH IN MEXICO

100% RECYCLED

4 STEPS

There are 4 steps companies can take to reduce their emissions: measure and plan; set a reduction goal; implement mitigation actions; and report and call to action.

US$ 18 BILLION

An investment of US$ 18 billion into cogeneration, renewable energies, energy efficiency and fuel substitution would have a cumulative net benefit of up to US$ 23 billion.

748 MTCO$_2$ PER YEAR

The amount of Mexico's greenhouse gas emissions per year, accounting for 1.5% of global emissions. The country is ranked 12th in terms of total emissions in the world and ranks 92nd in per capita emissions. Mexico has pledged to reduce its emissions by 30% below business as-usual by 2020 subject to international funding mechanisms and technology transfer.

8%

US$ 23 billion is equivalent to 8% of Mexico's GDP growth over the past decade.

WWF

Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

www.wwf.org.mx