

Mexico's transition towards a low-emission and climate resilient development.

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INE / SEMARNAT

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SEMARNAT



Objectives

- To describe our Policy Instruments on Low Emission Development and adaptation
- To describe our effort to develop a Climate Change Center in Mexico

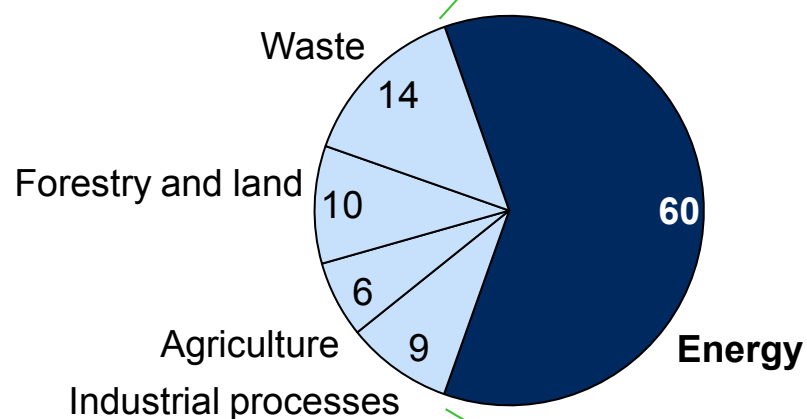


In 2006, México generated 709 MtCO₂e. Energy transformation and consumption accounted for 60% of total emissions

CO₂ Emission Totals

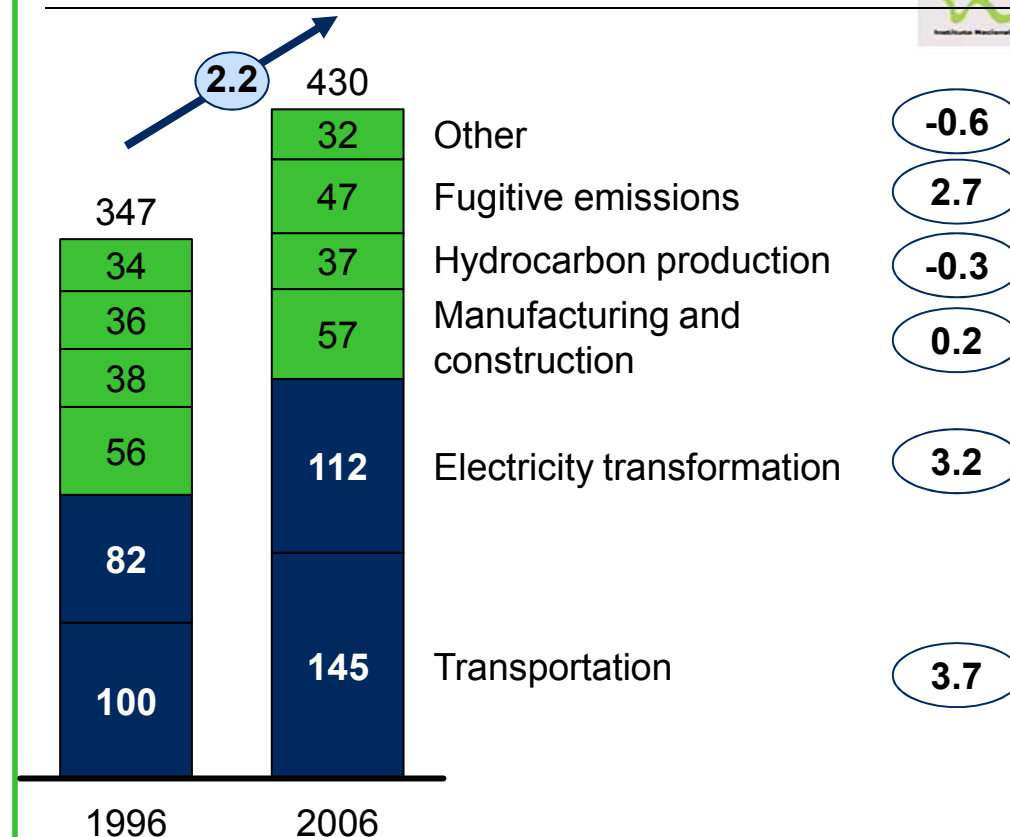
TgCO₂, Percentage, 2006

100% = 709 TgCO₂



CO₂ Emission – Energy Sector ¹

TgCO₂



¹ HFCs, PFCs y SF₆ Emissions are not included
Source: GHG National Registry (INEGI), INE 2009

Internationally, Mexico has pledged to reduce its emissions by 50 Mtons by 2012 and by 30% vs. business as usual by 2020



Emissions reduction pledge in Copenhagen Accord

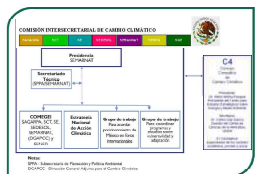
“Mexico adopted its Special Climate Change Program in 2009 including a set of nationally appropriate mitigation and adaptation actions to be undertaken in all relevant sectors. The full implementation of the Programme will achieve a reduction in total annual emissions of **51 million tons of CO₂e by 2012**, with respect to the business as usual scenario.

Mexico aims at **reducing its GHG emissions up to 30% with respect to the business as usual scenario by 2020**, provided the provision of adequate financial and technological support from developed countries as part of a global agreement.”

This administration has set as a priority taking action on climate change...



National Development Plan (2007-2012). For the first time **Sector Programs (2007-2012)** of several Secretaries propose strategies to face climate change



Intersecretarial Commission on Climate Change: Has coordinated the activities of the offices of the Federal Public Service on mitigation and adaptation

The **Fifth National Communication of Mexico** to UNFCCC is in preparation, will be updated the GHG Inventory to 2009. To be presented in COP 18 (2012)

Special Program on Climate Change: Identifies opportunities to reduce 50 MTons by 2012 across all sectors. Includes commitment for continued and periodical monitoring and review process

State Programs on Mitigation and Adaptation: Identifies mitigation and adaptation actions by sector: 4 Concluded, 22 Underway

15 Year Energy Policy Outlook: Sets targets on renewable penetration, Gas Flaring, Energy Efficiency









15 Year Water Policy Outlook: Identifies actions to decrease water scarcity and alleviate water related disasters

Climate Change Law: Several law initiatives have been submitted to Congress that include binding targets on mitigation, increased funding for research, etc.



PECC identifies 50 Mtons of abatement opportunity up to 2012 with 22 initiatives delivering 85% of target

■ Represent 50% of goal

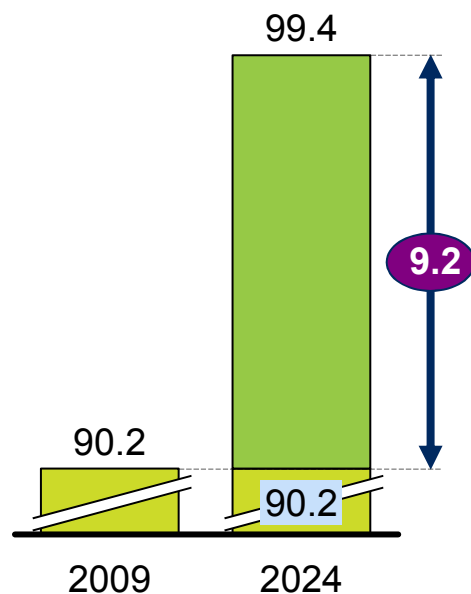
Sector	Initiative		Impact MtCO ₂	
	Code	Description		
Forestry	M.64	Incorporate more land into the Sustainable Forestry Management system	4.4	
	M.78	Design and implement an incentive scheme to reduce degradation of forests and deforestation	3.0	
	M.66	Create payment mechanisms for forestlands	1.4	
	M.65	Incorporate terrestrial ecosystems into the UMAS system	1.4	
	M.67	Incorporate lands into forestry ecosystems of the ANP	1.1	
	M.73	Establish a commercial forestland	0.6	
Oil & Gas	M.01	Injection of gas in Cantarell	6.9	
	M.03	Operational oil and gas efficiency projects	1.2	
	M.04	New operation of a cogeneration plant in PEMEX	0.9	
Power	M.18	Partner with private investors to increase renewable energy in self-generation for private sector by 2 GW	3.7	
	M.15	Increase CFE generation of wind power	1.2	
	M.11	Finish CFE thermoelectric project in Manzanillo	1.1	
	M.14	Finish the construction of hydroelectric plant La Yesca	0.8	
Buildings	M.37	Substitute appliances including refrigerators, air conditioners, and other equipment and light bulbs with more energy efficient devices	2.7	
	M.43	Install efficient wood burning stoves	1.6	
	M.39	Promote eco-friendly technologies in homes through "green mortgages"	1.2	
Transport	M.31	Increase train share of federal cargo	1.6	
	M.27	Create 38 new stretches of highways	1.2	
	M.29	Take 15 K "clunkers" out of federal transport system	1.1	
	M.26	Increase clean cargo and passenger transport under Semarnat's "Clean Transport" program	0.9	
Waste	M.82	Develop 29 projects aimed at reducing or eliminating landfill emissions	4.4	
Agriculture	M.63	Implement a planned grazing use on pastureland	0.8	

National Energy Strategy sets targets on renewable penetration, energy consumption, and gas flaring



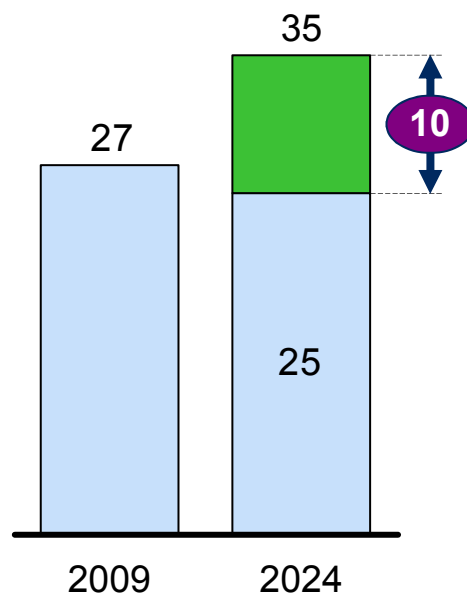
Natural gas usage

Percentage



Clean technology electric generation capacity

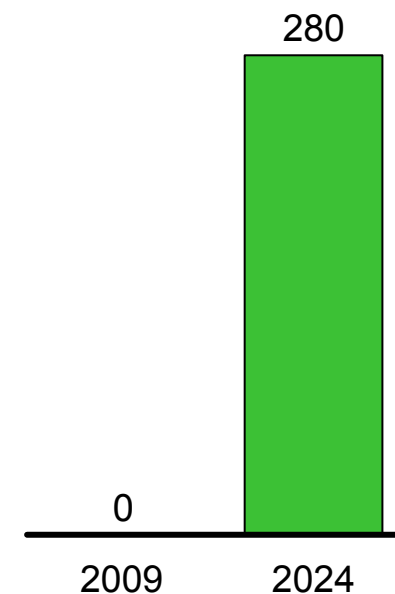
Percentage



- Includes large hydroelectric, nuclear and renewable

Final energy consumption savings

TWh



- Identified saving potential in the "Programa Nacional para el Aprovechamiento Sustentable de la Energía" ¹

¹ 197.4 TWh related to transport sector savings in gasoline and diesel

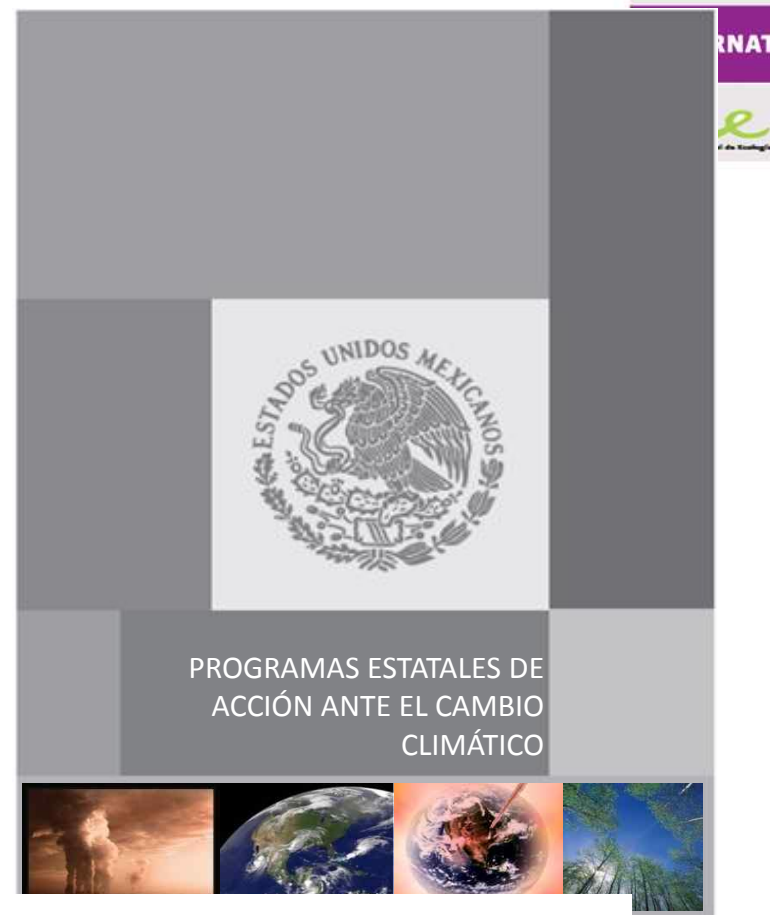
State plans strengthen decentralization, cooperation exchange and take into account local knowledge

Its usefulness:

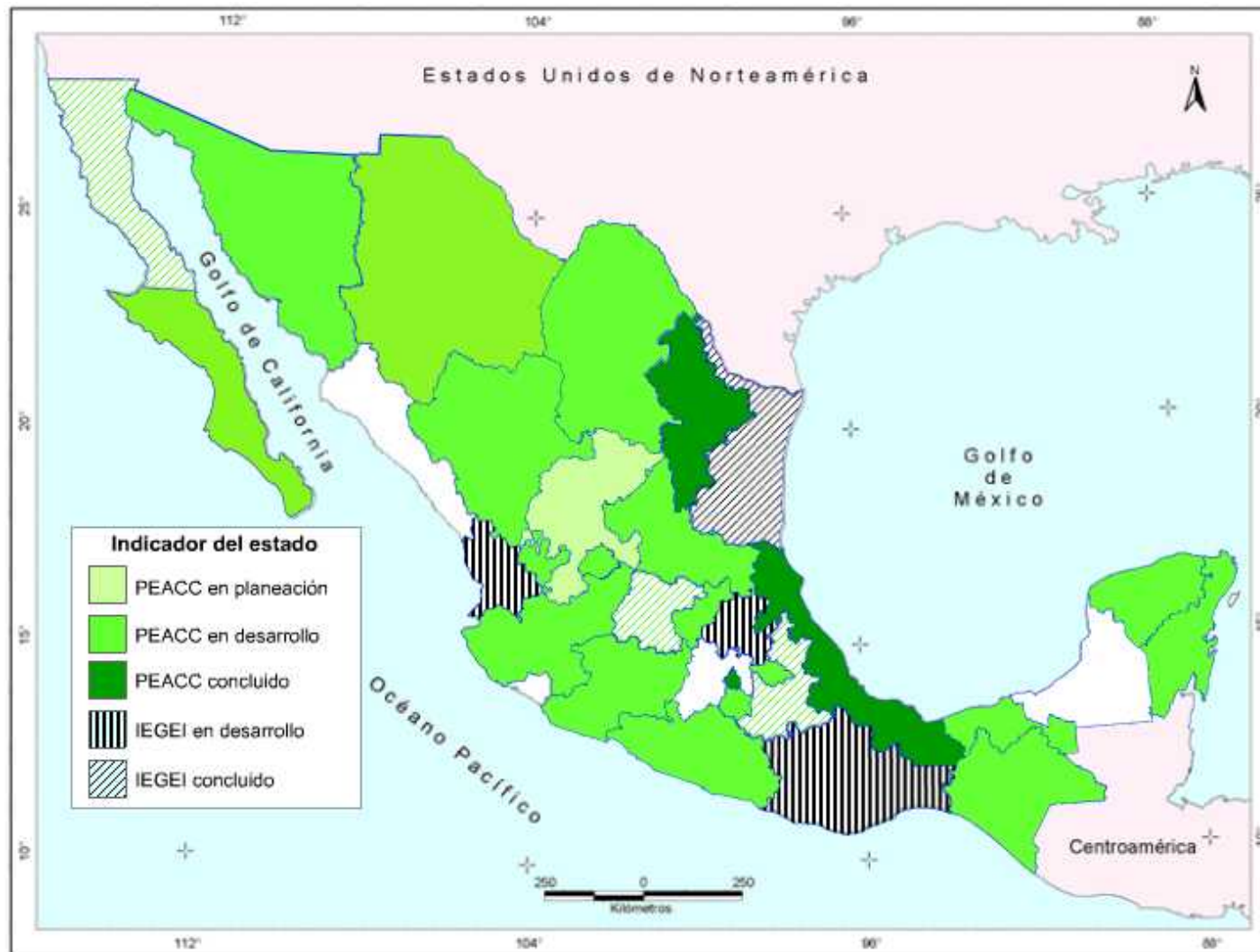
- Strengthen the **descentralization** process analysis, design of actions, and implementation of policies related to climate change.
- Induce **cooperation and exchange of experiences** between institutions at all levels and in all relevant areas of government, academia, the private sector, between states and society in general.
- Take into account the **knowledge "local"** on the problem and related factors, to support **capacity development**.
- Will form an important part in the critical path for climate change policy in Mexico.
- **Sustain the policies and actions** related to climate change at the state level.

Objective:

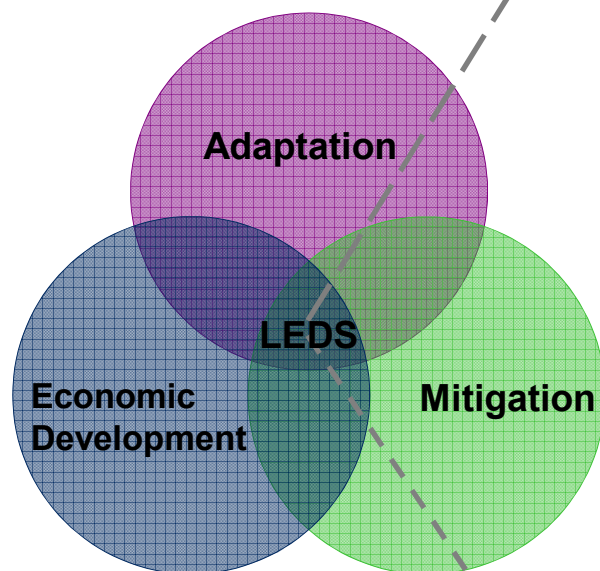
That PEACC be an instrument to support planning and development of public policies on climate change at the state level



4 State Plans have been concluded and 22 more are underway



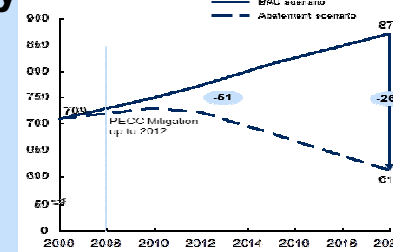
Where we are now (Mexican vision of LEDS)



Low Emissions Development Strategy

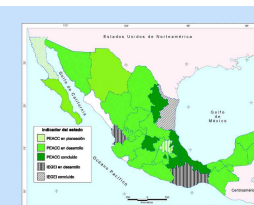
1. GHG emissions abatement potential in Mexico

- 1.1 GHG emissions abatement curves
- 1.2 Mitigation opportunities by sector
- 1.3 Sectorial GHG emissions reduction routes



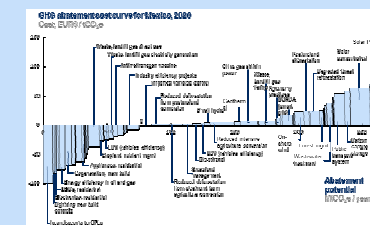
2. Adaptation potential in Mexico

- 2.1 Vulnerability and climate change risk mapping
- 2.2 Climate change adaptation targets
- 2.3 Identification of adaptation actions



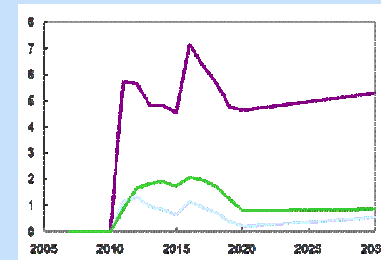
3. Impact assessment of GHG abatement and adaptation actions in Mexico's economy

- 3.1 Microeconomic analysis
- 3.2 Macroeconomic analysis
- 3.3 Finance sources analysis



4. Co-benefits of mitigation and adaptation actions

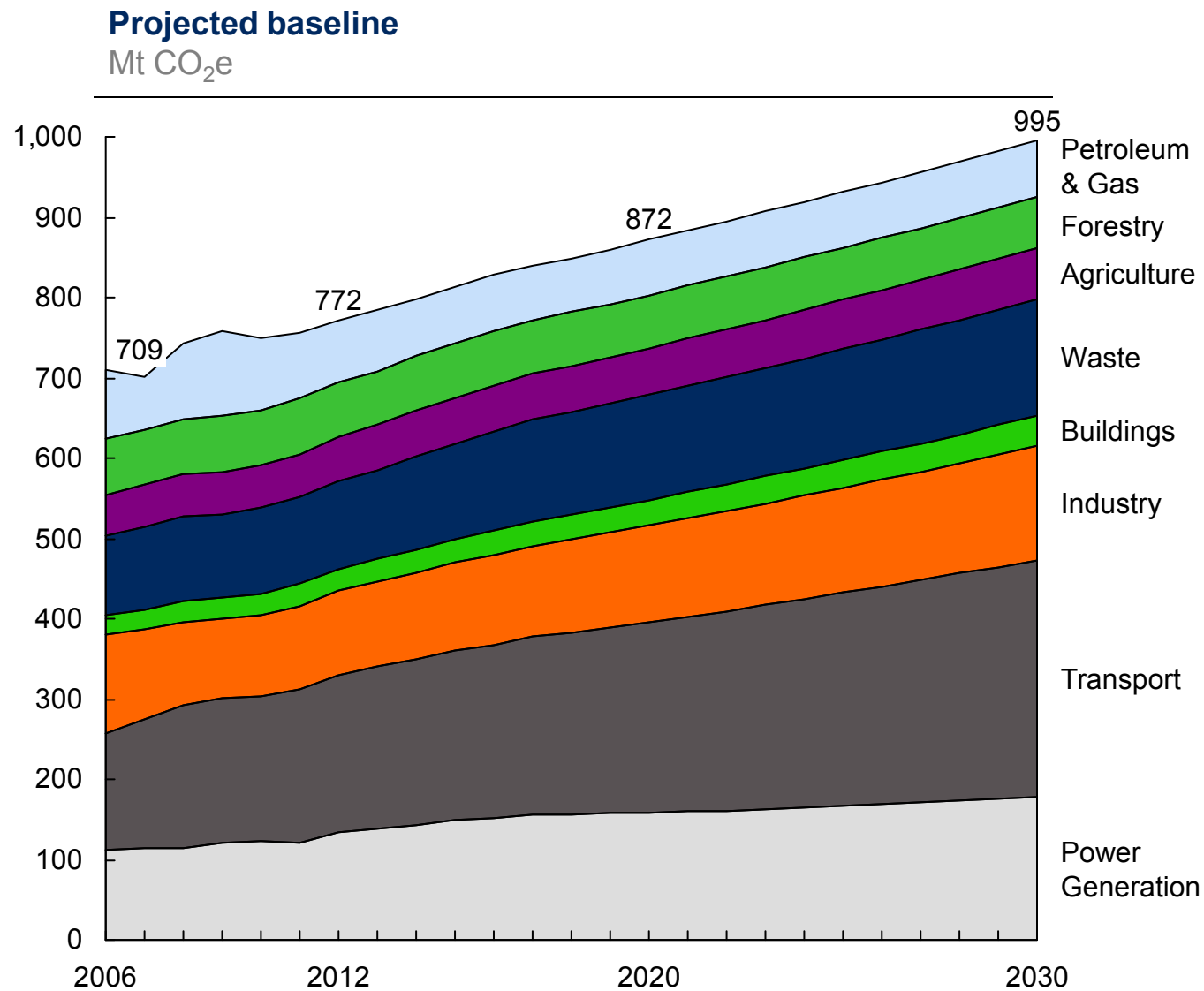
- 4.1 Energy security
- 4.2 Health and social welfare
- 4.3 International leadership in CC



5. Implementation strategy

- 5.1 Deployment routes and identified barriers
- 5.2 Strategy's integral trajectory

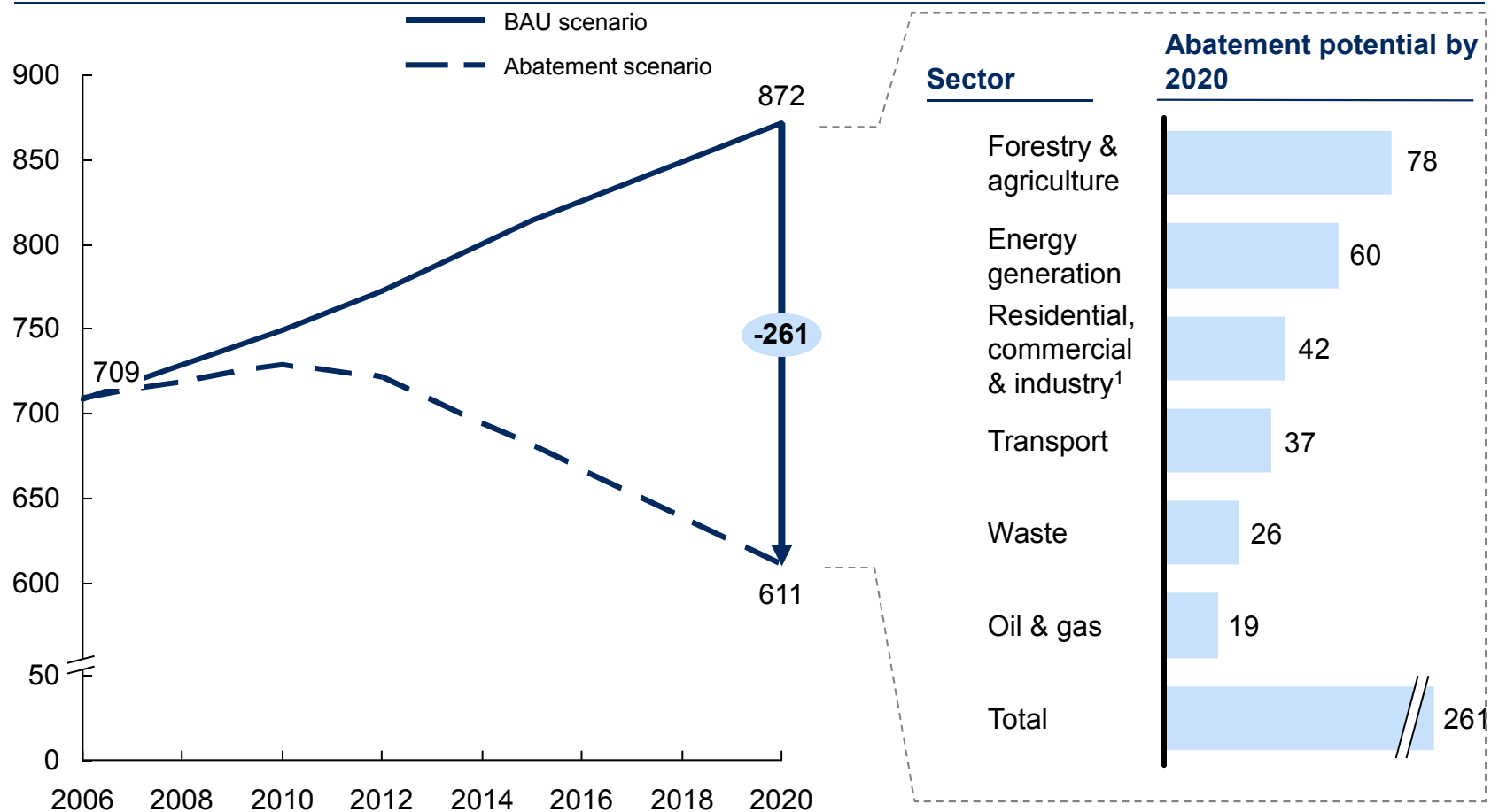
Mexico's emissions are expected to grow from 709 to 872 MtCO₂e between 2006 and 2020



Our LEDS identifies a potential to reduce 261 MtCO₂e by 2020, with respect to the BAU baseline scenario

Theoretical mitigation potential

MtCO₂e / year

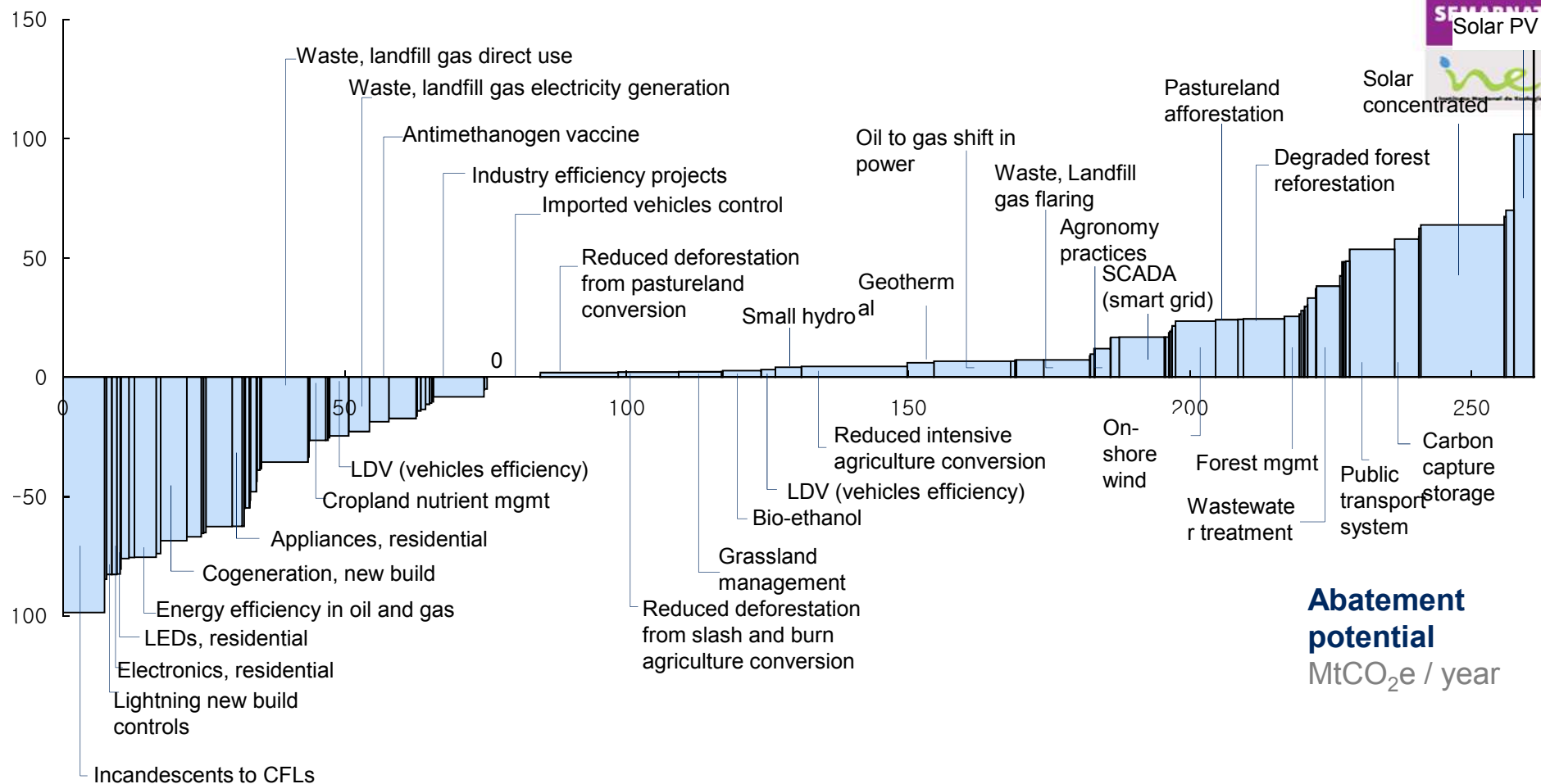


¹ Includes the abatement potentials of energy efficiency levers in the residential and the commercial sectors, as well as the mitigation levers of the industry sector

This potential is based on a carbon abatement cost curve for all sectors in economy

GHG abatement cost curve for Mexico, 2020

Cost, EUR\$ / tCO₂e

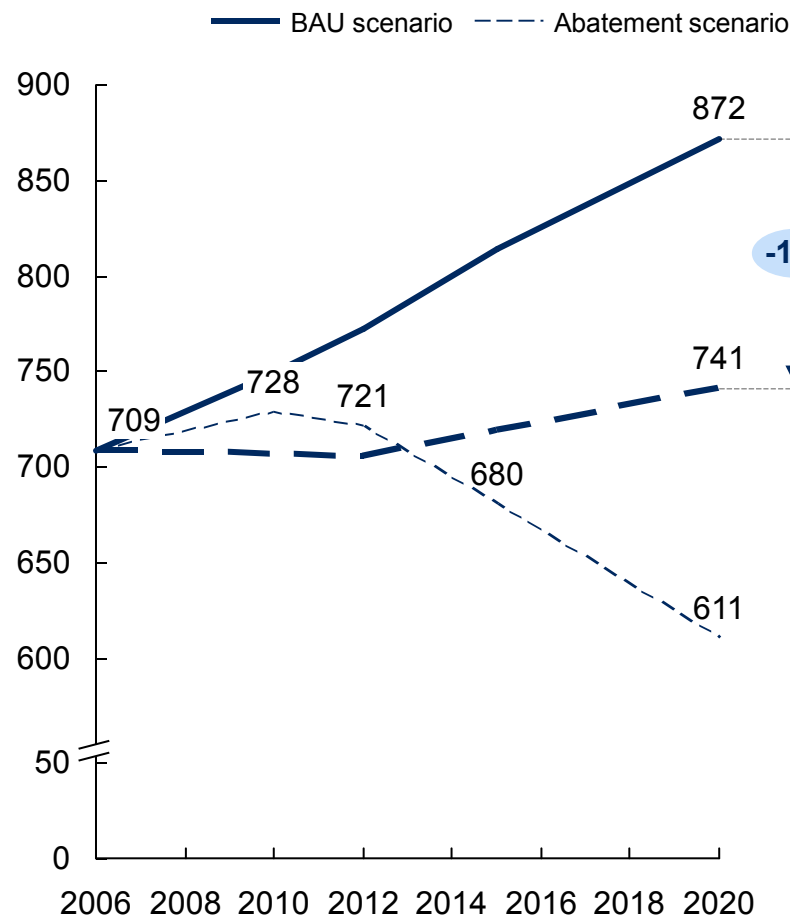


Mexico has a potential to reduce 261 MtCO₂e by 2020, and we already have a portfolio of projects accounting for about 50% of the goal committed

PRELIMINARY

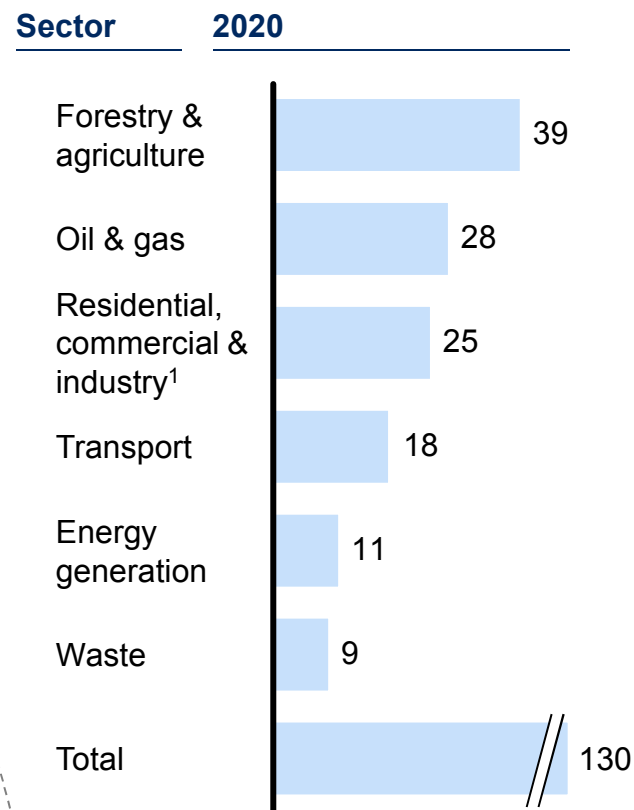
Abatement potential

MtCO₂e / year



Abatement potential of current projects

MtCO₂e / year



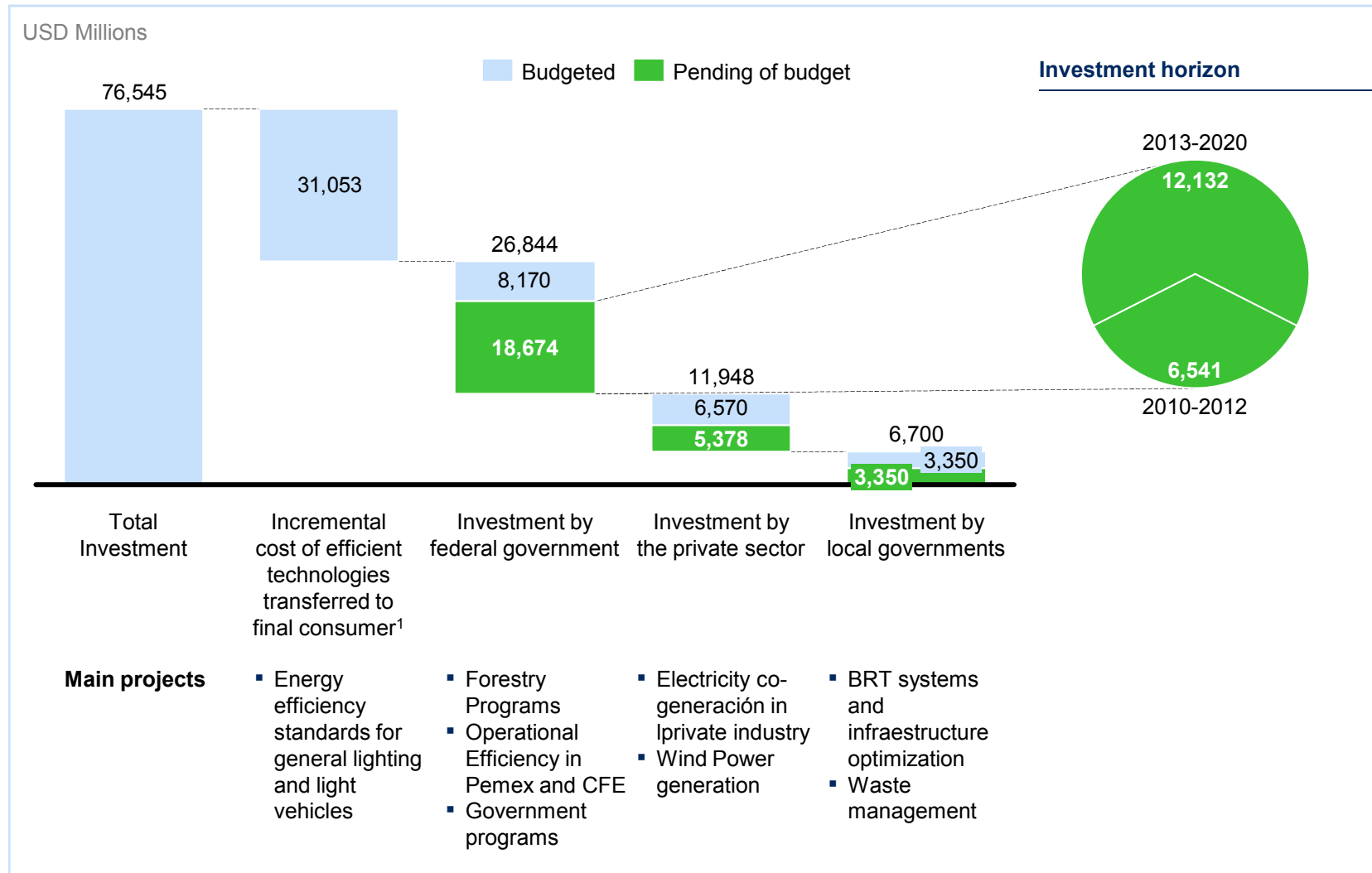
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¹ Includes the abatement potentials of energy efficiency levers in the residential and the commercial sectors, as well as the mitigation levers of the industry sector

Investment needed adds to around USD 76.5 Billions for which Mexico will need support from international community

PRELIMINARY



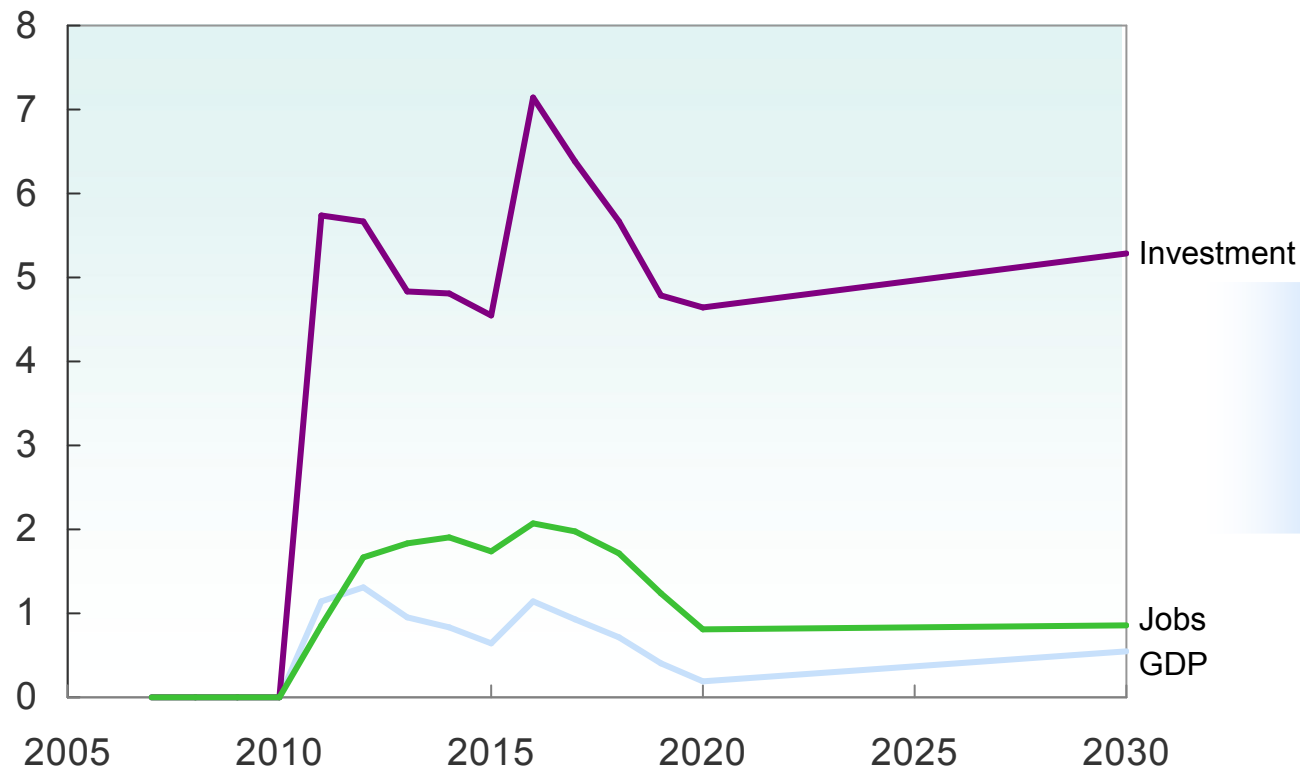
¹ Upfront cost can be alleviated by federal social programs. These projects are profitable if final energy savings are taken into account.

At the same time, emissions reduction could drive a low-carbon investment boom that increases GDP and creates jobs

Low carbon case difference from reference case, percent

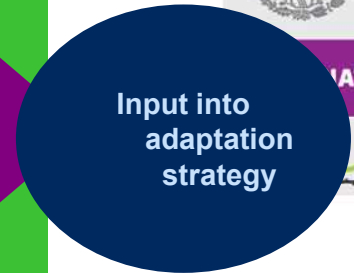
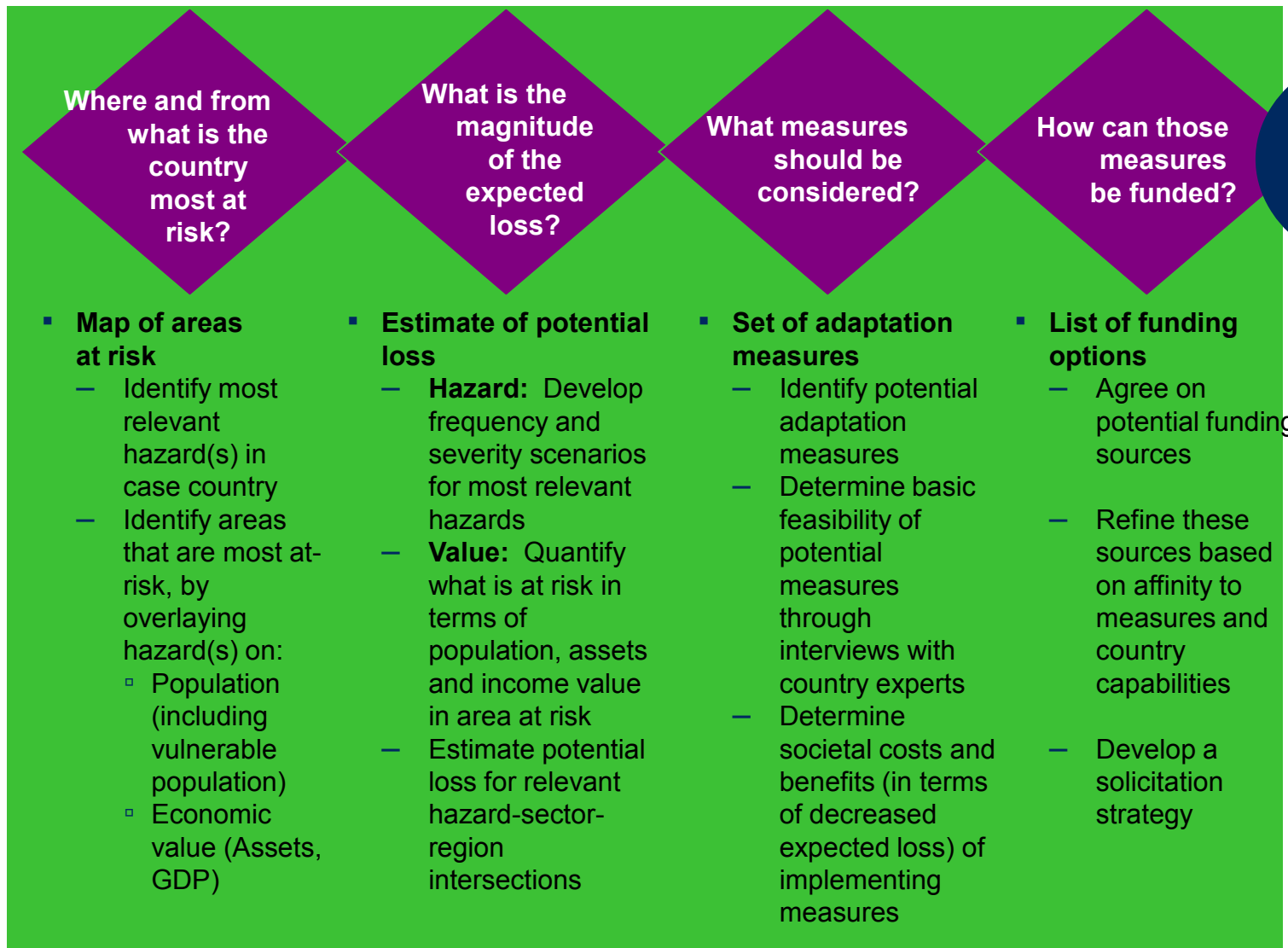


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- Investment in low carbon technology and infrastructure could stimulate the rest of the economy
- This can increase economic growth by up to 1 percent (thereby spurring even more investment across the non-carbon economy)
- While some jobs would be lost e.g., in oil and gas sector, the net impact is estimated as an *addition* of half a million jobs by 2030

Mexico will need to determine how to allocate efforts and resources to most vulnerable areas to increase resilience and mitigate the expected climate change effects



Today the country has limited water availability and this effect is expected to be exacerbated in the future because of the expected growth in demand

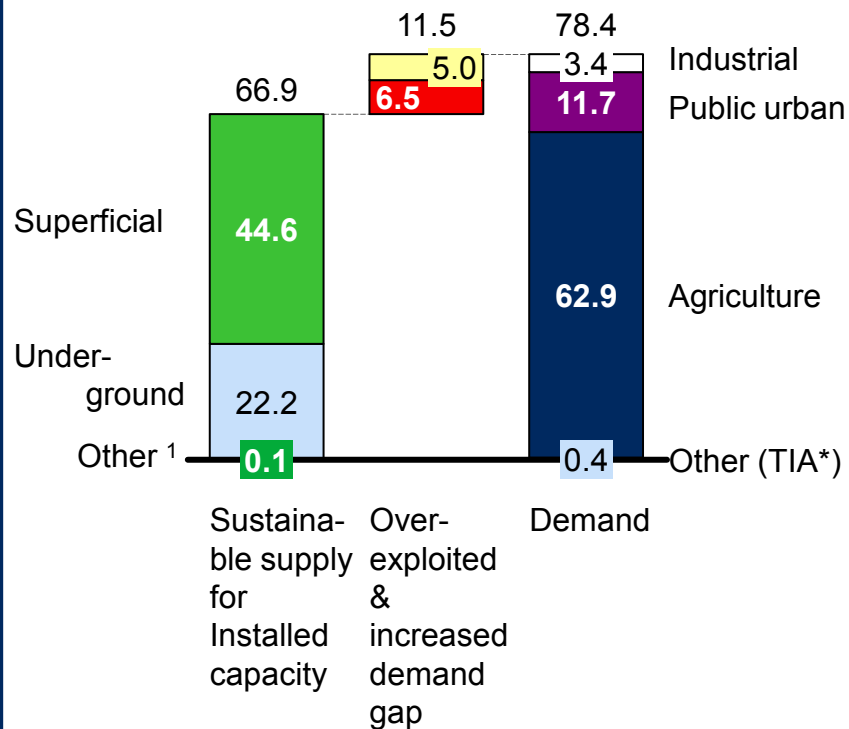
Over exploited superficial resources
Over exploited underground resources



Currently the demand is supplied in an unsustainable manner ...

Gap between offer and demand

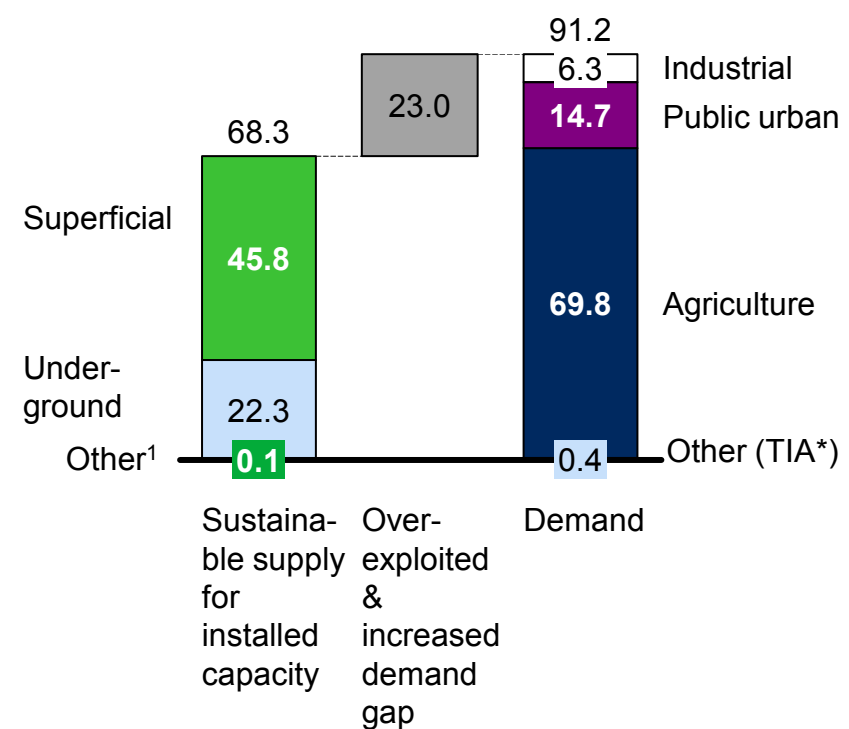
Thousands of hm³, 2006



Given the expected high growth in demand, the gap is expected to be of 23 thousand hm³

Gap between offer and demand

Thousands of hm³, 2030



* TIA: Tratado Internacional de Agua de 1944

¹ Offer from non traditional sources (e.g. Desalination plants)

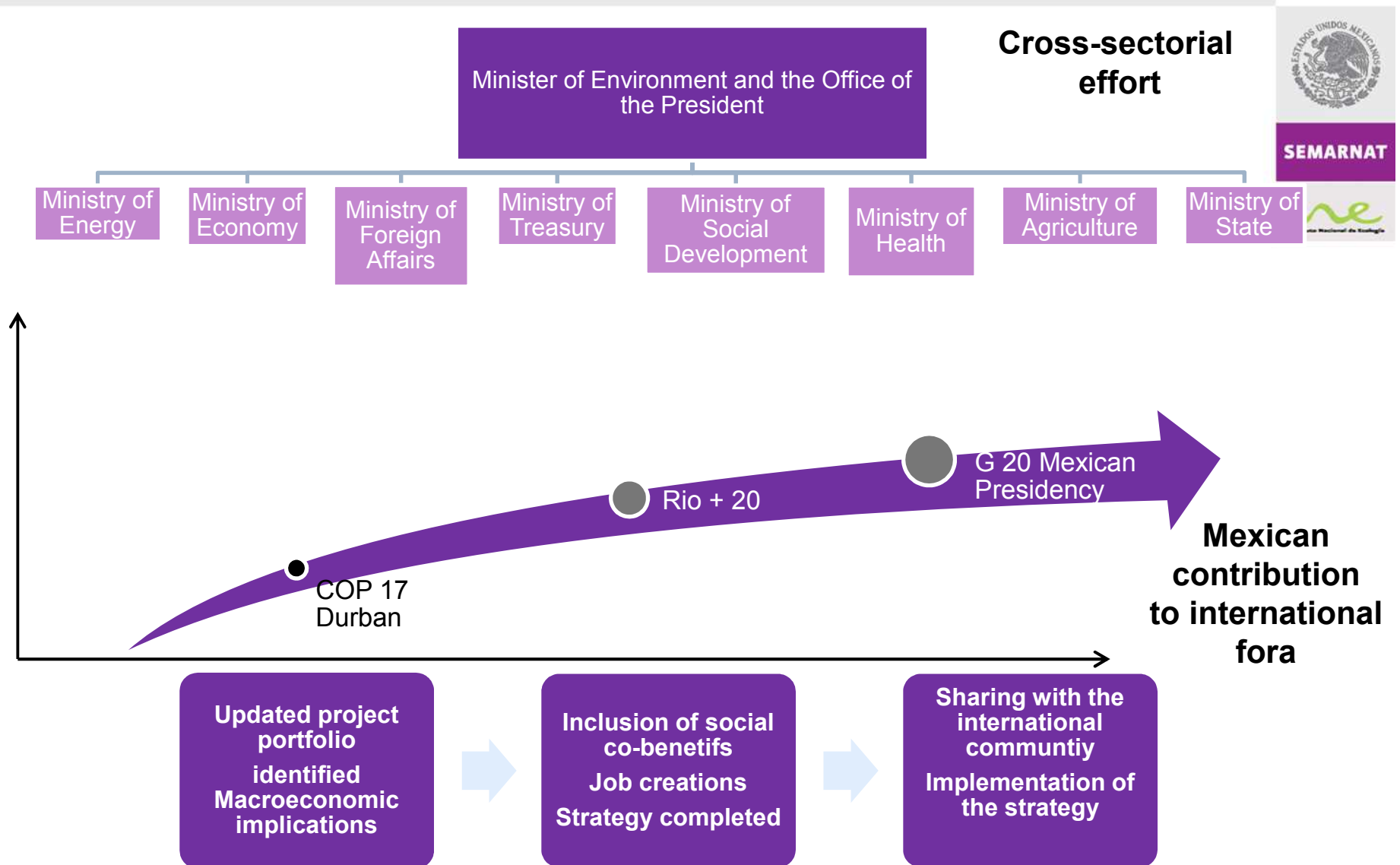
SOURCE: Agenda del Agua 2030, CONAGUA

Measures to achieve ~60% of the solution are agricultural sector focused initiatives

	Action	% of the solution ¹	% investment	Marginal cost (\$/m ³)
1	Increase the automation and irrigation efficiency in agriculture <ul style="list-style-type: none"> Implement pressurized irrigation (sprinkler and localized), real-time irrigation and tillage optimal in ~ 2 million hectares 	61%	29%	0.2
2	Promote municipal efficiency leak repair pro-grams and use of more efficient technologies <ul style="list-style-type: none"> Use of faucets and toilets with less use of water and repair leaks in urban areas 	16%	41%	-3.4
3	Increase the use of water efficient technologies in industry <ul style="list-style-type: none"> Use water saving technologies, dry cooling, dry rinsing and dry lubrication conveyor systems 	4%	6%	-4.4
4	Continue to build infrastructure to supply growth areas <ul style="list-style-type: none"> Construction of dams, wells, canals, desalination plants and reuse of treated water 	19%	24%	1.8
The measures can reduce a total of ~21,500 hm ³ from expected gap		100%	100%	Total investments account for ~24 billion USD

¹ Solution defined as covered 2030 gap out of the ~21,500 hm³

Achieving our short term aims



We are developing an Excellency Research Centre to be located in Mexico City for interdisciplinary analysis on Climate Change that will:

Provide the necessary elements to develop **public policies** that will enable the transition to a **low carbon economy** in Mexico and **developing countries in the Region**

Establish a **national and international network** with other centres of excellency that will assure the incorporation of best practices.

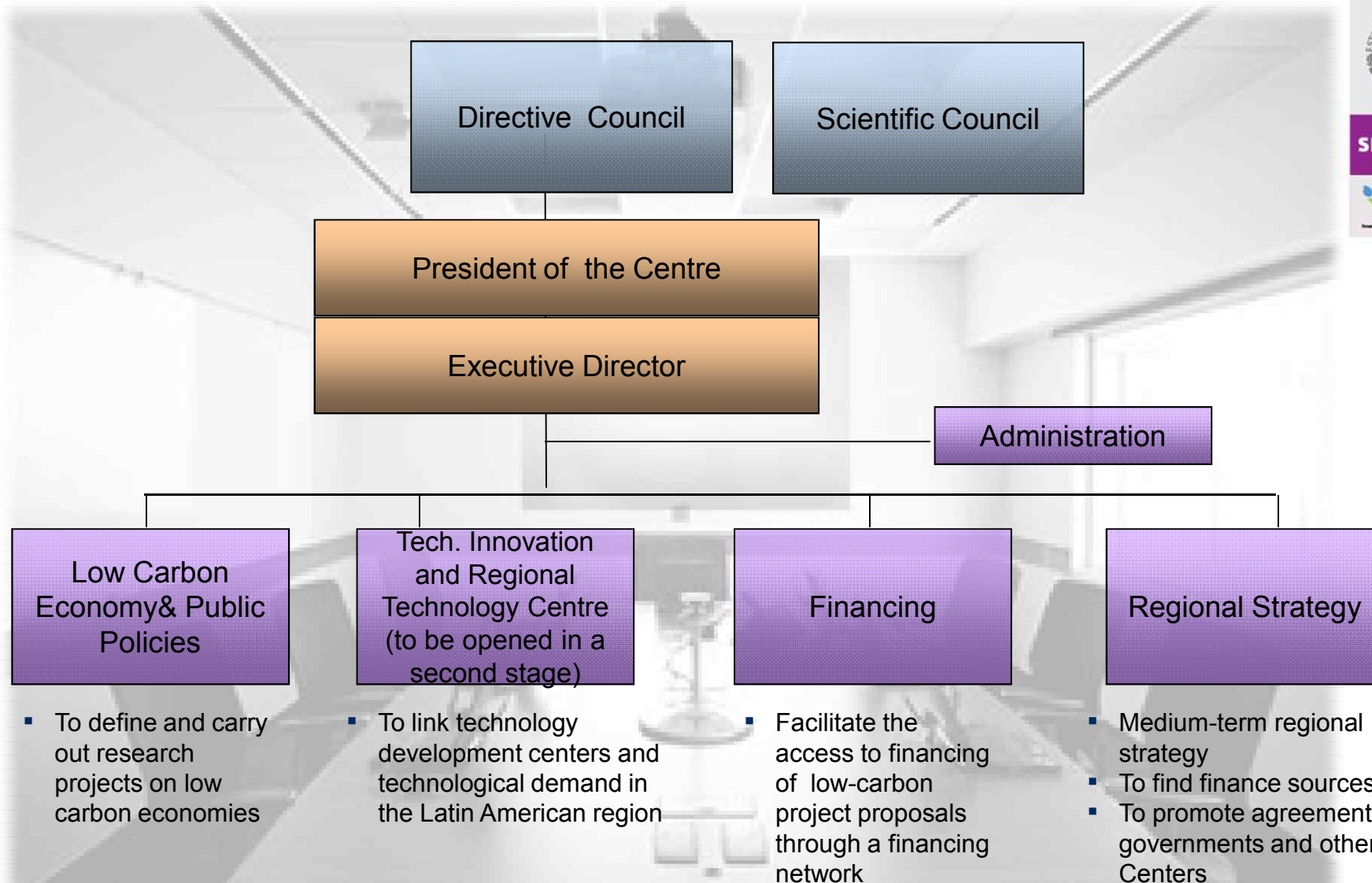
Facilitate the **adoption and transfer of technologies** that will allow transit towards a low carbon economy (Regional technological Centre)

Facilitate **access to financing** to develop projects leveraging the network

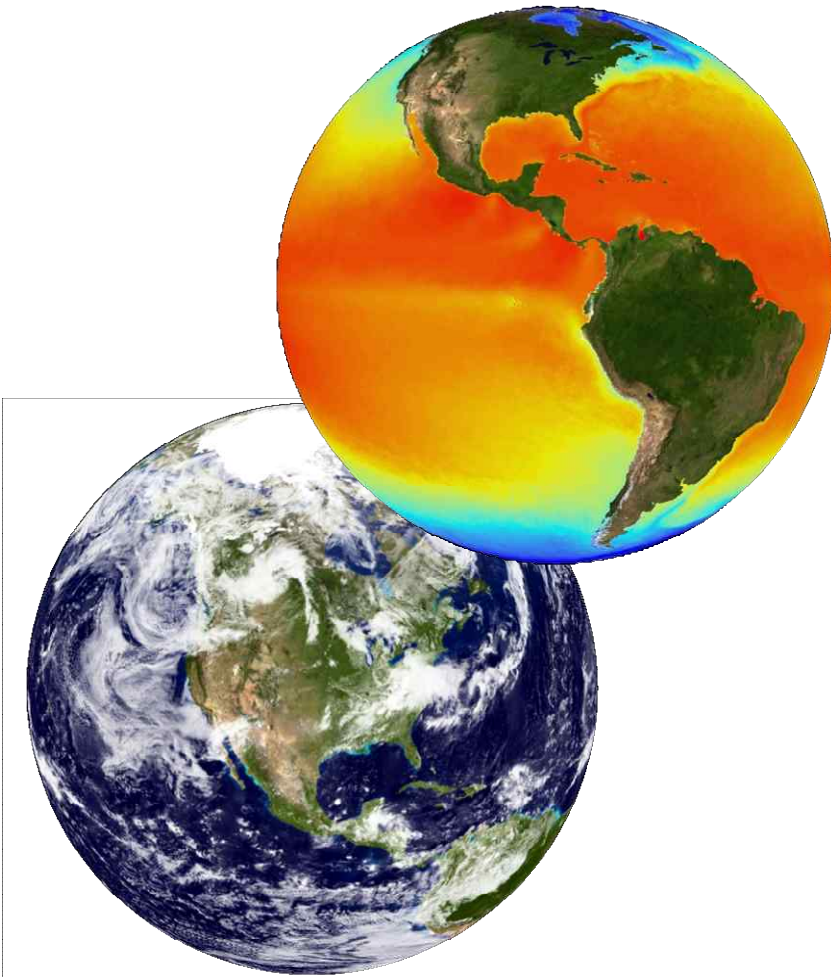


- The Mexican Center could build a strategic partnership with (GGGI) in a **South-South collaboration** scheme for supporting other developing countries

It will operate with a Directive Council, a President and an internationally renowned Executive Director



Thank You



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President

National Institute of Ecology



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Please visit our web page:

<http://www.ine.gob.mx/>

Climate Change Portal:

http://cambio_climatico.ine.gob.mx/

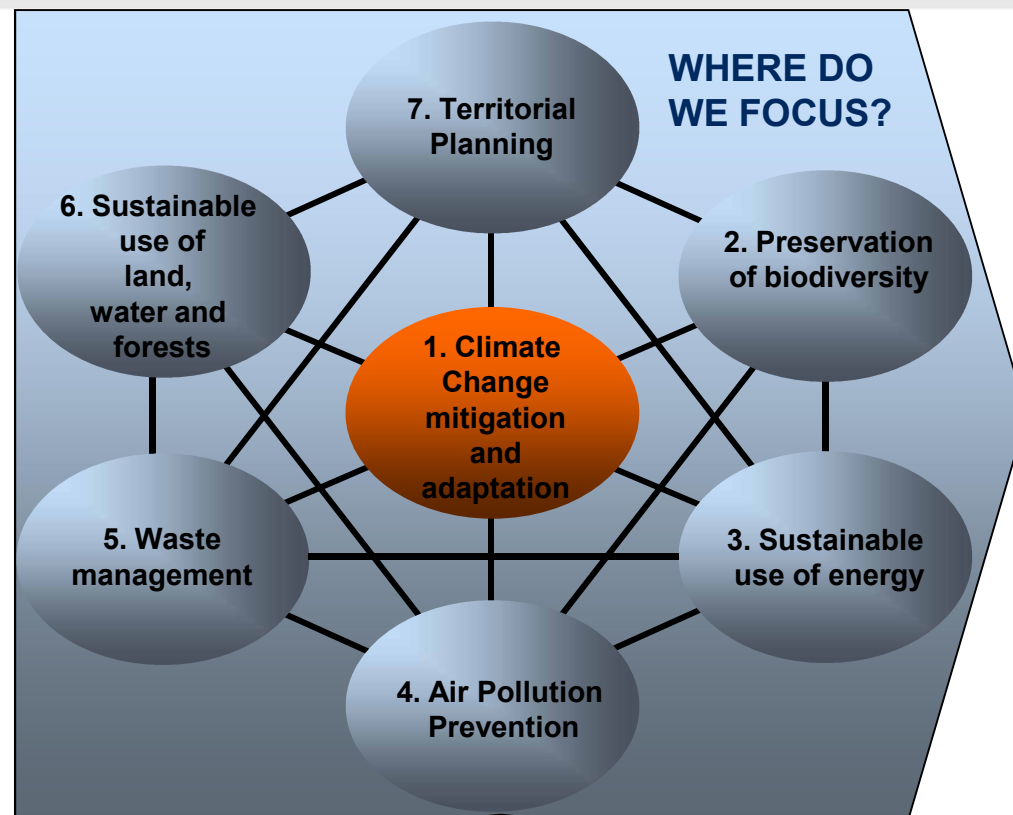


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Mexico is pursuing a Green Growth Strategy along seven dimensions

 Focus of document



WHAT WILL WE ACCOMPLISH?

Achieve economic growth

Generate employment and alleviate poverty

Preserve our natural capital

Reduce Vulnerability

Ensure security of supply of food, energy and water

Contribute to our common but differentiated responsibilities



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HOW DO WE DO IT?

Pricing Mechanisms/
Taxation

Regulatory
Standards

Innovation Policies
and Finance and
Technology Transfer

Focalization of
subsidies

Infrastructure
Investment
Programs

Institutional and
Governance
Capacity