



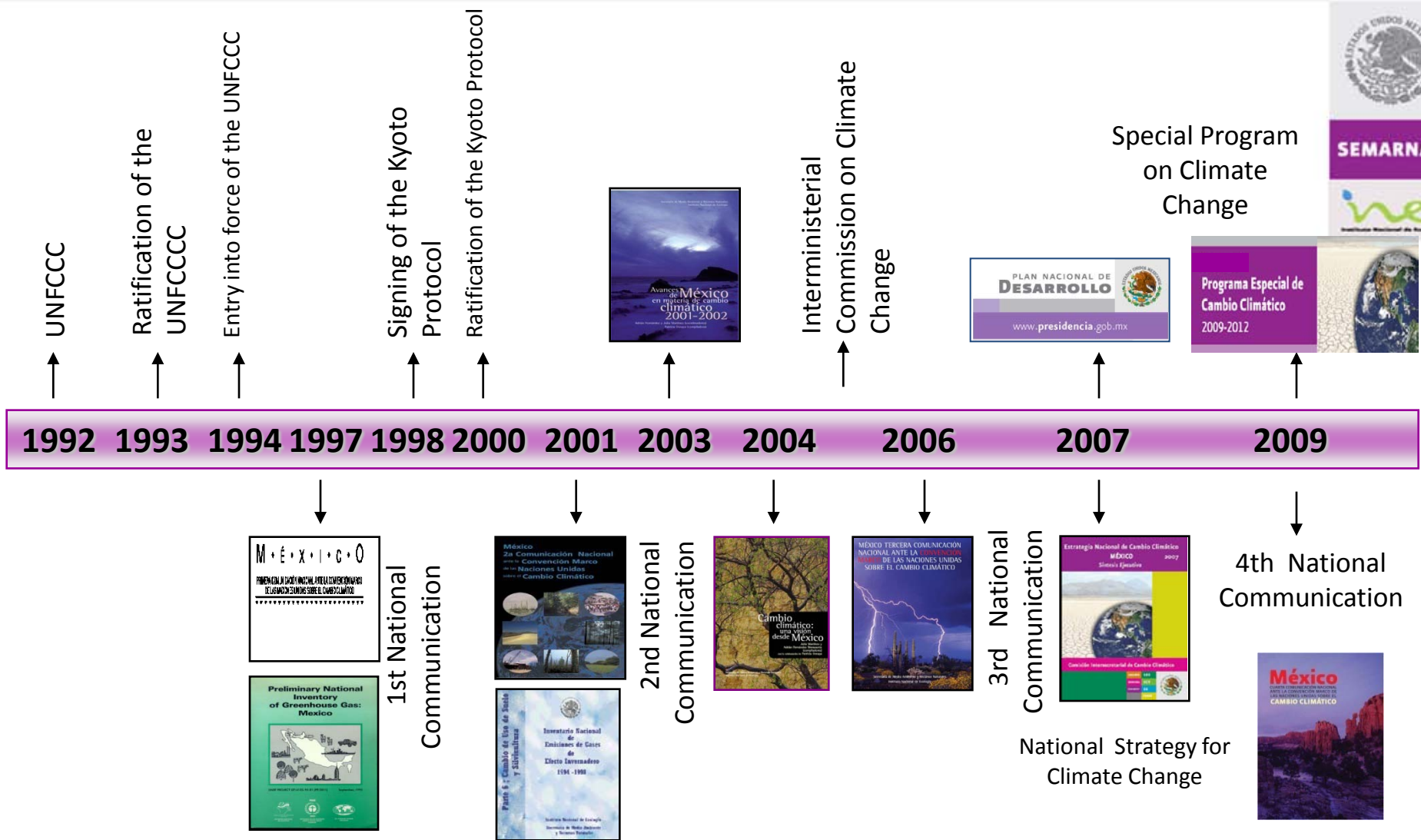
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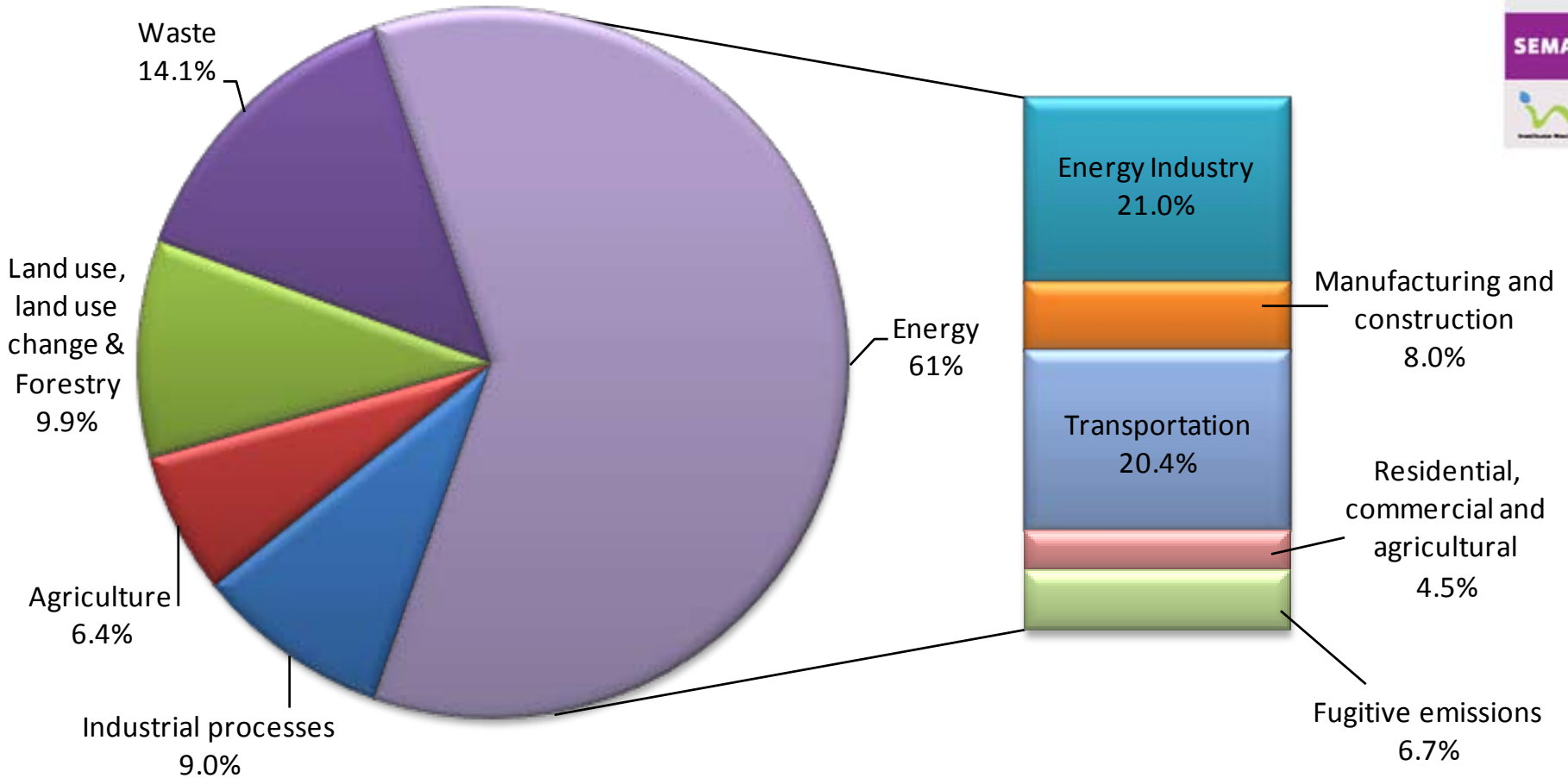
Mexico's Perspectives on the North American Carbon Market

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Activities of Mexico

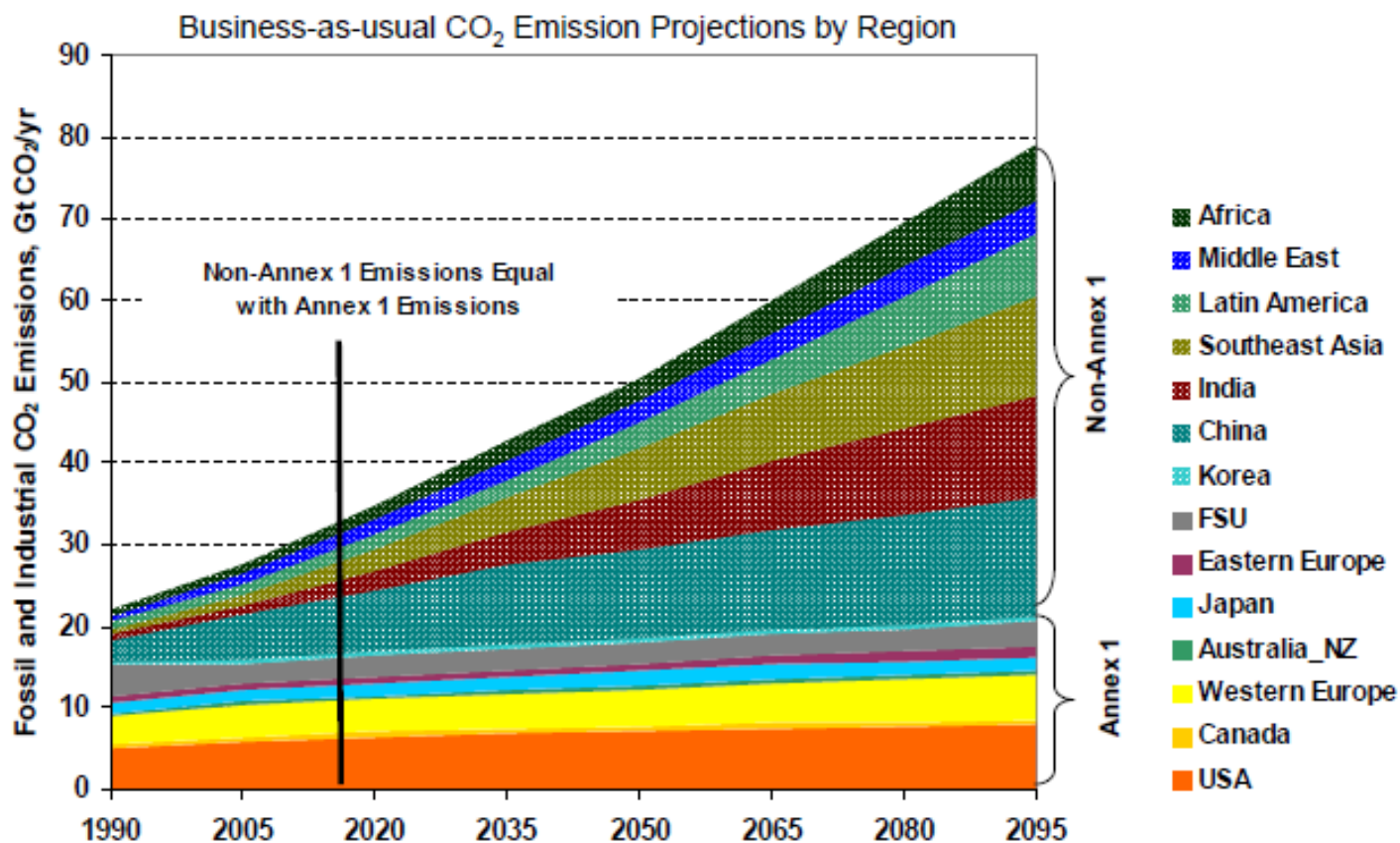


National GHG Inventory, 2006



709 million tonnes of CO₂eq

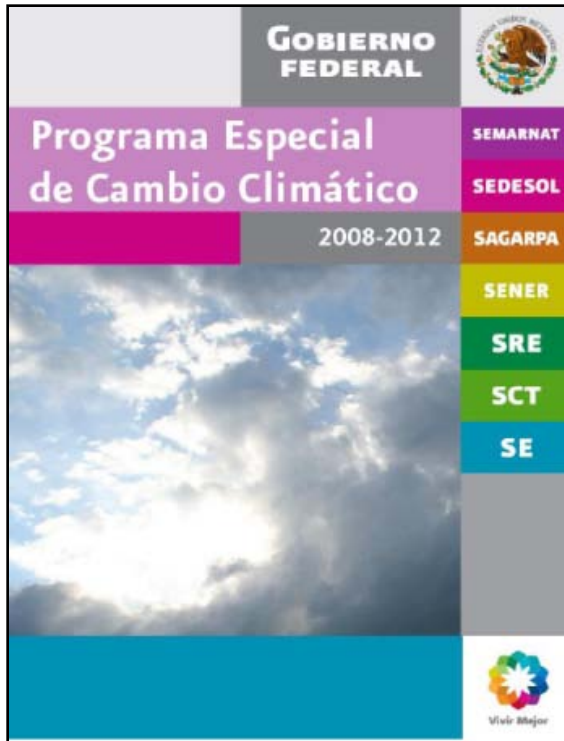
Important Transitions in Emitting Countries Over the Coming Century



Data derived from *Global Energy Technology Strategy, Addressing Climate Change: Phase 2 Findings from an International Public-Private Sponsored Research Program*, Battelle Memorial Institute, 2007.

Source: James Connaughton. Chairman Council on Environmental Quality. 2008

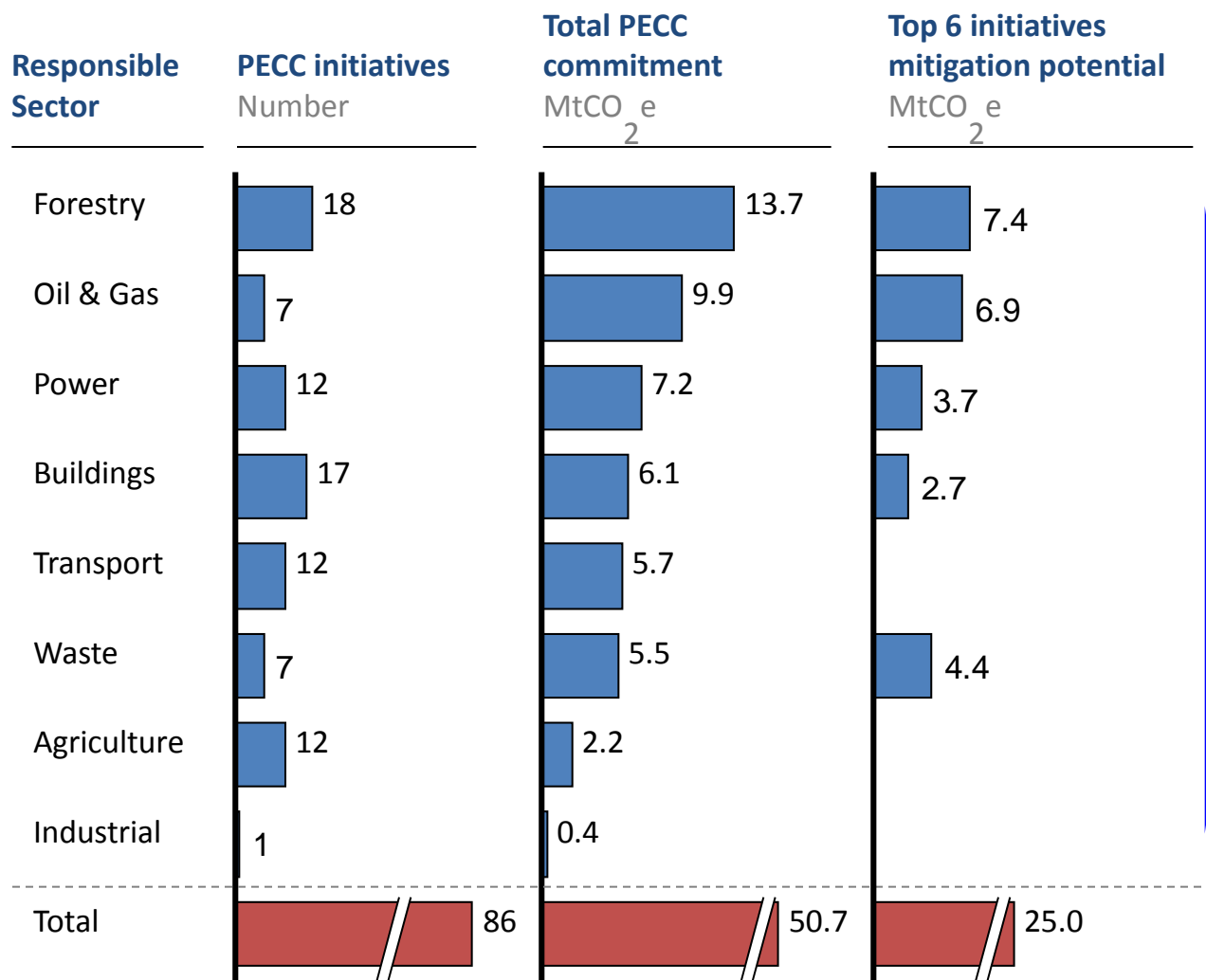
The Special Program on Climate Change 2008-2012 (PECC)



PECC establishes quantitative mitigation and adaptation goals for the period 2008-2012

- In 2012 the mitigation goal is roughly 50 MtCO₂e (about 8% of total emissions).
- For the period 2008 -2012, twelve groups of measures account for 60-70 % of the GHG potential

SEMARNAT is in charge of monitoring and reporting Mexico's commitment to abate 51 MtCO₂e by 2012 through PECC's 86 initiatives



Key elements to ensure meeting the commitment

- **Follow-up** on the initiatives to **ensure they are executed** and meet the targets
- **Monitor any potential variations** on the abatement of the PECC initiatives by 2012
- **Find additional** mitigation initiatives to **overcome potential under-delivery** or delay in the execution of PECC initiatives



Source: After PECC, INE-McKinsey Team Analysis

Validation of emissions reductions estimates



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- ***Nationally Appropriate Mitigation Actions*** (NAMAs) by developing country Parties ...enabled by technology, financing and capacity building, in a **mesurable, reportable and verifiable manner**
- There will be supported and unsupported NAMAS
- Should contribute to a demonstrable deviation of baseline emissions in a reasonable time horizon (i.e. 2012 to 2020)
- Some of the **measures proposed in the PECC** can be measured through the National Greenhouse Inventory, others will require a more elaborate methodology

Mitigation measurements of GHG with and without Monitoring, Report and Verification potential

Number according technical card	Feasible measures of Monitoring, Report and Verification (MRV)	Mitigation Potential MtCO _{2e} 2012
8	Acid gas re-injection in Cantarell	7
14	Landfills	4
10	Support to self-sufficient renewable energy supply projects	4
4	Vehicle fuel efficiency standard	4
1	Substitution and phase out program of domestic appliances and incandescent light bulbs (<i>Para vivir mejor</i>)	3
3	Installation of 600 K fuel efficient wood stoves	2
9	Increased operative efficiency in PEMEX	1
2	Efficient housing and green mortgage	1
12	"La Yesca" Hydroelectric	1
13	Thermoelectric Plant Manzanillo, Colima (integral project)	1
6	Scrapping program for federal freight vehicles	1
11	Wind generation in CFE	1
	Subtotal measures with MRV	29

Number according technical card	Measures with difficulties to be Monitoring, Report and Verification(MRV)	Mitigation Potential MtCO _{2e} 2012
15	Incorporation of 3 million hectares into Sustainable Forestry Management	4
16	Pilot project of incentives for Reduction of Emissions by Deforestation and Degradation (REDD)	3
5	Increase of heavy rail as a percentage of total freight transportation	2
17	Incorporation of 2 million hectares into Payment for Environmental Services schemes	1
18	Incorporation of 2.5 million hectares of terrestrial ecosystems into the Management Units for the Conservation of Wildlife system	1
7	Construction of 38 highway stretches	1
19	Incorporation of 1 million hectares of forest ecosystem into Natural Protected Areas	1
20	Pasturing plan in 5 million hectares	1
	Subtotal measures without MRV	14

The 20 main measures of the SPCC contribute 43 Mt CO_{2e} in 2012. Other miscellaneous measures approximately add 10 MtCO_{2e}.

Source: INE Analysis after PECC.



Commitments announced by Mexico in the context of the UNFCCC

- The National Institute of Ecology (INE) recently reviewed the assumptions and calculations regarding the Low Carbon Growth options available for Mexico, in order to define the country's mitigation potential by 2020.
- This assessment included a wide range of measures: self-financed, low, medium and high cost.
- As a result of these analysis, it was estimated that Mexico could reduce around 10% of its emissions by 2020 compared to the BAU case with our own financial and technological resources and capabilities, although for this to be possible **it is necessary to make changes in laws and key institutions in the short-term. Some “enabling” resources will also be necessary.**
- President Felipe Calderon announced that **“if the needed financial and technology required become available”**, the country would commit to achieve a reduction of **up to 30 percent by 2020**, from its BAU case emissions scenario.



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Emission reductions announced by developed countries in the context of the UNFCCC

	<i>Emission reductions by 2020</i>	Base year
Australia	5% up to 15% / 25%	2000
UE 27	20% / 30%	1990
Japan	25%	1990
USA	Around - 17%, the final target to be reported in light of enacted legislation The pathway in pending legislation is a -30% by 2025 and -42% by 2030, and -83% by 2050	2005*
Canada	17%, same USA	2005

*1990 = 6,126.8, 2005 = 7,133.2 Million Tons CO₂eq

<http://www.epa.gov/climatechange/emissions/usinventoryreport.html>

Source: The outcomes of Copenhagen. The Negotiations & The Accord. UNDP. 2010



Emission reductions announced by emerging economies in the context of the UNFCCC

Country	Reduction	Notes
Brazil	36-39% of their emissions with respect to BAU in 2020	conditioned to financial support
South africa	34% reduction from BAU in 2020	conditioned to financial support
Indonesia	26% with respect to BAU in a unilaterally way in 2020	Alternatively: up to 40% conditioned to financial support
South Korea	30% compared to BAU in 2020	With their own resources
China	40 to 45% of their emissions intensity by 2020 compared to 2005	instead of referencing the reduction to 1990, they have chosen the same base year that referred to by the United States (2005), not very ambitious
India	20-25% of their emissions intensity by 2020 compared to 2005	The proposal is the less ambitious among emerging economies
Mexico	10% with respect to BAU in 2020 with own resources	Alternatively: up to 30% conditioned to financial support



Source: The outcomes of Copenhagen. The Negotiations & The Accord. UNDP. 2010

Market mechanisms to mitigate GHG PK

1. **Joint Implementation (JI)**: exchange of emission reduction units generated by the investment projects of a non-Annex I

2. **International Emissions Trading (CIE)**: emissions trading between Annex I countries

3. **Clean Development Mechanism (CDM)**: emission reduction certificates originated from projects in developing countries.

a) **Programmatic**: the emission reductions are achieved by multiple actions of one sector (i.e. energy savings through the installation saving light bulbs in several states) and run on time as a result of a government measure or an industry initiative private or civil partnership.

b) **Sector**: compensation in various sectors (i.e. industry, power generation, etc.).



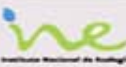
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Other mechanisms



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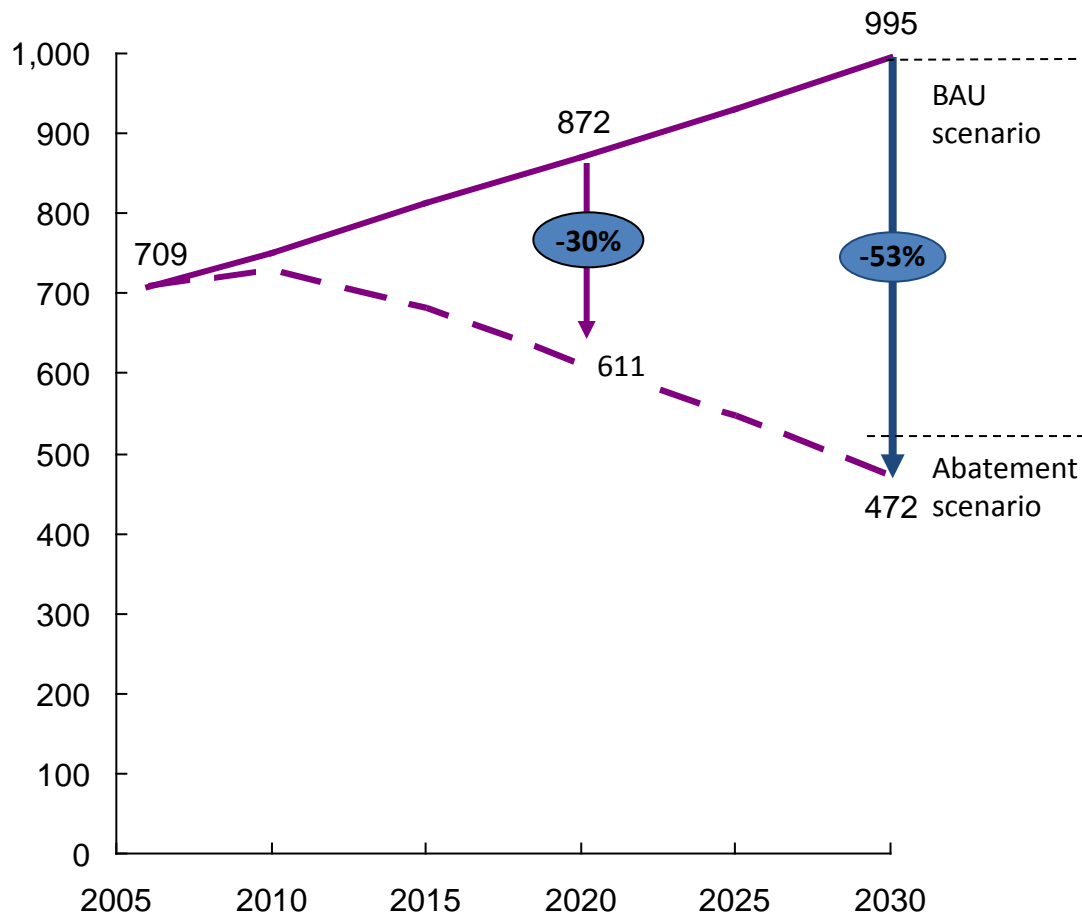
Cap and trade: it enables governments to define a total limit to emissions, distribute them according to some equity criteria, and allow the (national, international) market to reassign them to where more economic gains are obtained (efficiency).

Voluntary market: Markets for carbon offsets and other type of reductions in emissions that follow independent sets of registration and trading rules, different from those of the UN.

Mexico has the potential to mitigate ~261 MtCO₂e in 2020 and ~523 MtCO₂e in 2030

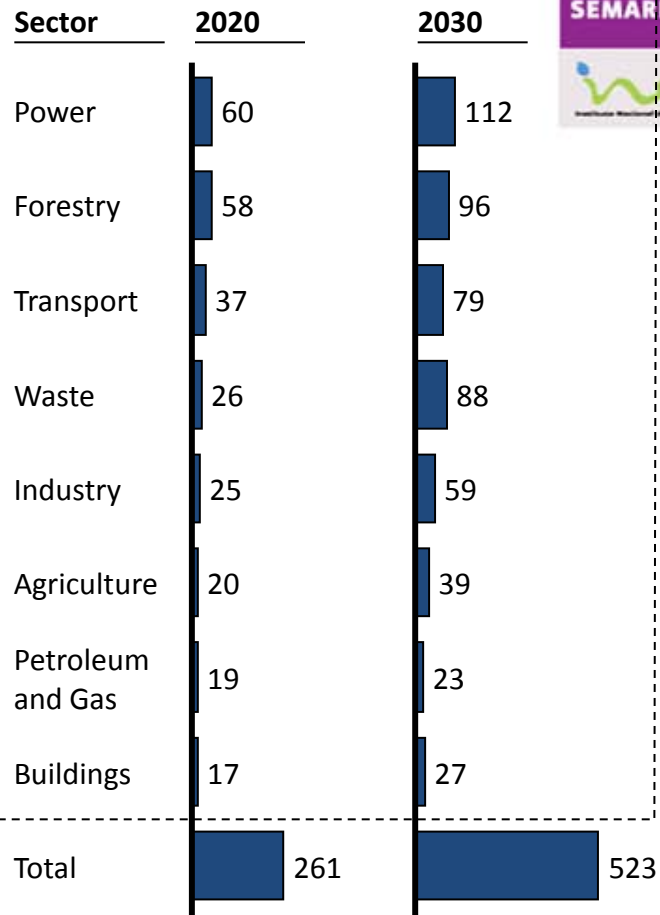
Projected mitigation potential

MtCO₂e



Identified abatement potential

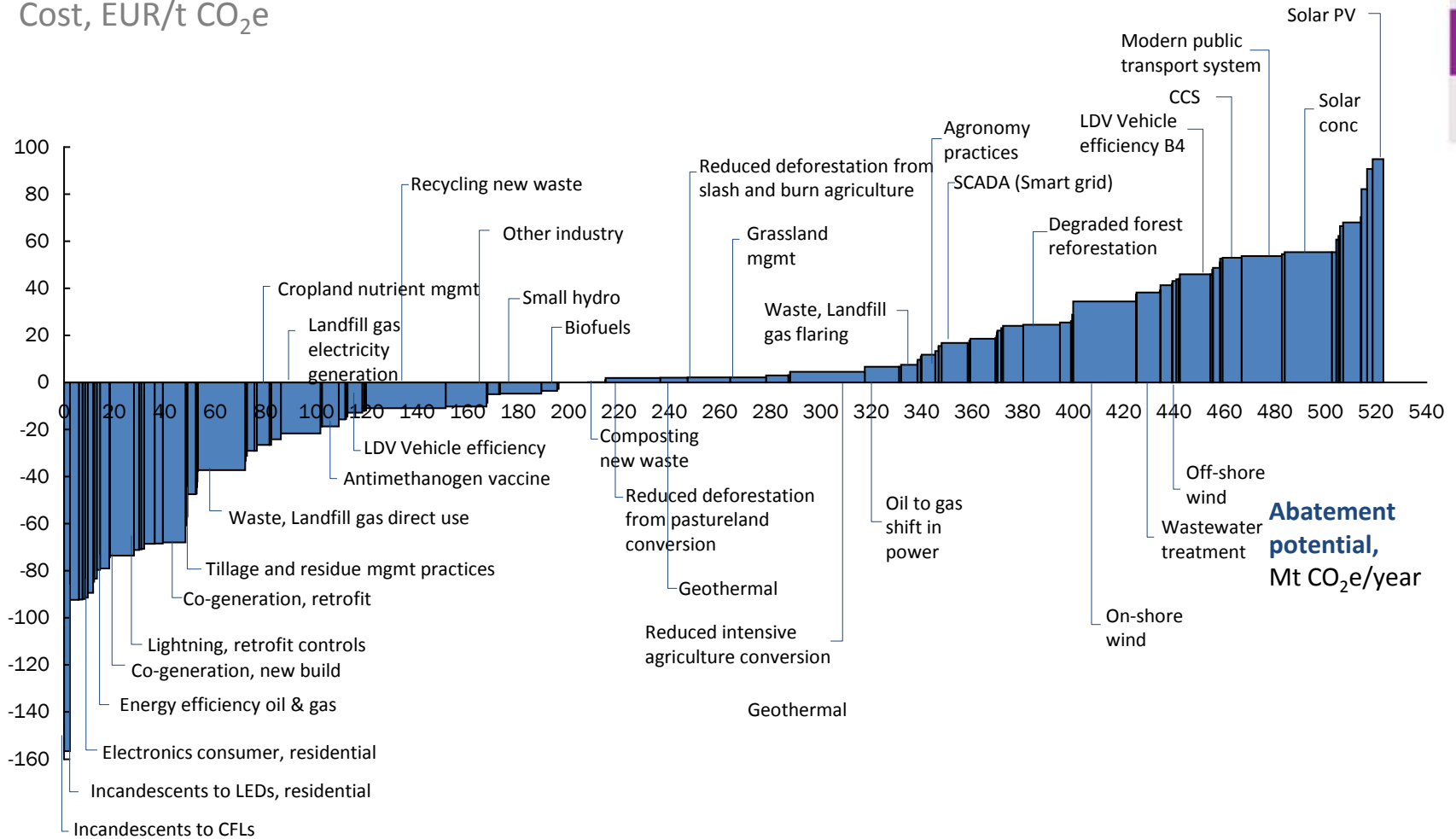
MtCO₂e



By 2030, Mexico may capture up to ~523 MtCO₂e through 131 abatement levers across all sectors

GHG abatement cost curve for Mexico in 2030

Cost, EUR/t CO₂e



Source: INE-McKinsey Team Analysis

CDM Projects (July 2010)

Proyecto MDL por Categoría	RCEs* emitidas de proyectos registrados		Proyectos registrados ante la Junta Ejecutiva del MDL	
	RCEs obtenidas		Promedio anual de RCEs esperadas	
	No.	tCO ₂ e	No.	tCO ₂ e/año
Energy Distribution	0	0	0	
Energy Efficiency	1	69,615	3	552,781
Industrial emissions	1	4,789,363	2	3,323,462
Methane fugitive emissions	0	0	1	82,645
Wind	3	174,928	8	2,434,730
Geothermal	0	0	0	
Hydroelectrical	3	244,574	3	118,844
Waste management from cattle farms	1	3,273	17	195,925
Waste management from swine farms	23	1,236,064	74	2,318,420
Waves	0	0	0	
Reforestation- Forestation	0	0	0	
Acid gas reinjection in oil wells	0	0	0	
Land fills	2	227,388	14	1,726,627
Solar	0	0	0	
Fuel substitution	0	0	0	
Transport	0	0	0	
Waste water treatment	0	0	1	15,153
Co-generation	0	0	0	
Subtotal	34	6,745,205	123	10,768,587
Energy Efficiency	0	0	1	24,283
Transportation	0	0	0	
Subtotal programmatic	0	0	1	24,283
Total general	34	6,745,205	124	10,792,870



Source: Subsecretaría de Planeación y Política Ambiental. SEMARNAT

Opportunities for carbon market in Mexico

Carbon Dioxide CO₂

- Renewables
- Energy efficiency
- Forest sector & REDD
- Fuel switching (Oil to gas shift in power)
- Cogeneration
- Carbon Capture and Storage (CCS)

Methane (CH₄)

- Burning and utilization of landfill gas
- Recycling and composting
- Wastewater Treatment
- Antimethanogen vaccine and Feed Supplements (Livestock)
- Reduce venting and flaring

There are also significant opportunities in the following industries:

- Aluminum and electronics (PFCs)
- Electric (SF6 transformers)
- Refrigerant (HFC)



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Prepared for an eventual North American Market



In the long run, a US and/or Canadian carbon market will develop. Mexico will be prepared to fully participate in it.

Example: American Clean Energy and Security Act

Objective: reduce emissions of greenhouse gases (GHG) emissions by approximately 80% in 2050 compared to 2005

To meet this goal, it proposes a declining emissions over time and to allow emissions trading (**Cap and Trade**)

It appears feasible to have a joint strategy to reduce emissions from the U.S., Canada and Mexico because of the economic interaction between these countries, mainly in the North American Free Trade

Mexico should become part of this strategy to avoid affecting trade in goods and services with the US & Canada

Mexico would have to accept **sectoral caps** as a protection measure to the carbon-intensive and trade-exposed industries in the US

THANK YOU



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