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# The Role of CCS in Mexico's National Energy Strategy

Leonardo Beltran  
Director-General, Information and Energy Studies

IEA-SENER Workshop, CCS in Mexico: Policy Strategy Options for CCS  
March 7<sup>th</sup>, 2011



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# Members of the Working Group

Ministries	National Companies and others	Regulators	Institutes
<ul style="list-style-type: none"><li>■ Energy</li><li>■ Economy</li><li>■ Environment</li></ul>	<ul style="list-style-type: none"><li>■ Comisión Federal de Electricidad</li><li>■ Petróleos Mexicanos</li><li>■ Conacyt</li><li>■ Conagua</li><li>■ Mexican Geological Service</li></ul>	<ul style="list-style-type: none"><li>■ National Hydrocarbons Commission</li><li>■ Energy Regulatory Commission</li></ul>	<ul style="list-style-type: none"><li>■ Electrical Research</li><li>■ Oil Research</li><li>■ Ecology</li></ul> <div><ul style="list-style-type: none"><li>■ Mario Molina Center</li></ul></div>

# International Commitments

Forum	Commitment
Global Carbon Capture and Storage Institute (Apr .09)	<ul style="list-style-type: none"><li>■ Operate more than 20 CCS projects at industrial by 2020, supported through interchange of experiences, best practices and information.</li></ul>
North American Leader's Declaration on Climate Change and Clean Energy. (Aug. 09)	<ul style="list-style-type: none"><li>■ Elaborate an Atlas of CCS, in order to have a harmonized mapping methodology which will be useful for sharing information about large carbon emission sources and potential storage sites in North America.</li></ul>
Carbon Sequestration Leadership Forum (Oct.09)	<ul style="list-style-type: none"><li>■ Mexico expressed the need to deepen global cooperation through information exchange, especially on demonstration projects.</li></ul>
Clean Energy Ministerial (Jul.10)	<ul style="list-style-type: none"><li>■ Mexico endorsed the creation of the Carbon Capture, Use and Storage Group.</li></ul>

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Current status and trends	Background	<ul style="list-style-type: none"><li>▪ Importance</li><li>▪ Mexico's participation</li><li>▪ Purpose of the document</li></ul>
	CCS Technologies	<ul style="list-style-type: none"><li>▪ Capture systems</li><li>▪ Transport</li><li>▪ Storage</li></ul>
	Costs Comparison	<ul style="list-style-type: none"><li>▪ Capture</li><li>▪ Transport</li><li>▪ Storage</li></ul>
	International Experience	<ul style="list-style-type: none"><li>▪ Commercial projects in operation</li><li>▪ Policies</li><li>▪ Implementation barriers</li></ul>
Diagnosis	Mexican Case	<ul style="list-style-type: none"><li>▪ Atlas of CO<sub>2</sub> storage</li><li>▪ Enhanced oil recovery</li><li>▪ Demonstration project</li></ul>
	International Position	<ul style="list-style-type: none"><li>▪ Storage permanence of CO<sub>2</sub></li><li>▪ Measurement, reporting and verification</li><li>▪ Carbon market implications</li></ul>

# Diagnosis – Mexican Case

## Atlas

- Inclusion and exclusion areas
- Characterization of 11 basins:
  - Mexican Storage Atlas (March 2012)
  - North American Carbon Storage Atlas (April 2012)

## Enhanced Oil Recovery

- Experimental tests:
  - Artesa field (2000) / Sitio Grande field (2005)
- Pilot projects in operation:
  - CO<sub>2</sub> injection in Ogarrio field
  - Enhanced oil recovery in Aceite Terciario del Golfo asset

## Demonstration Project

- Analyze the viability of capturing CO<sub>2</sub>
  - Poza Rica thermoelectric plant
  - Use for EOR in Aceite Terciario del Golfo asset
  - Possible injection in Coyotes or Poza Rica field

# Special Program on Climate Change 2009-2012

## Mitigation

Goal  
2.1.10

Strengthen national capacity for the eventual uptake of capture and geological storage of CO<sub>2</sub> generated by the energy industry.

Action

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Conduct a study of the state of the art of CO<sub>2</sub> capture and geological storage technologies and their viability in Mexico, to be published by 2012.

Action

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Analyze the synergies between a thermoelectric or combined cycle power facility and projects that can use carbon dioxide emissions to speed up the photosynthetic process, materials production or alternative fuels.



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# National Energy Strategy 2012-2026

## Ongoing activities

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- Document: "Carbon Capture, Use and Storage in Mexico"

Working Group

- National Strategy on CCUS

- CO<sub>2</sub> Storage Atlas

- Analysis of the technology roadmap for the development and deployment of CCUS in Mexico, including a pilot plant (<20MW), and a demonstration plant (>300MW).

# National Energy Strategy 2012-2026

## Action 3.4.1

Mitigate GHG emissions from energy sector activities

Establish a reference and regulatory framework for the national development of capture, transport, use and storage of CO<sub>2</sub>.

Develop the CO<sub>2</sub> Storage Atlas.

Link the use of CO<sub>2</sub> to Enhanced Oil Recovery Programs.

Develop MMV programs for CCUS.

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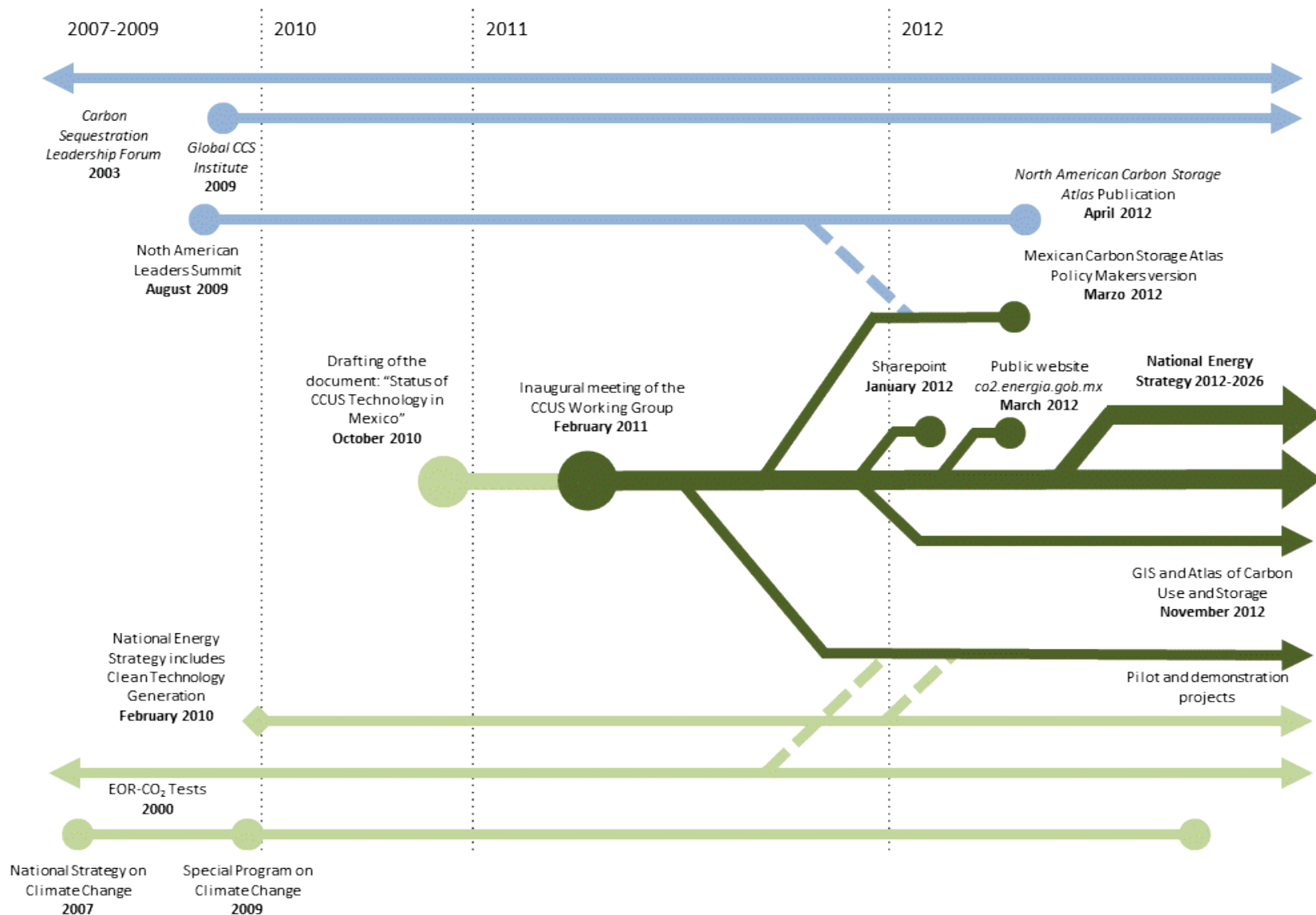
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# CCUS Time-line



**TIME-LINE OF INSTITUTIONAL ACTIVITIES ON CARBON CAPTURE, USE AND STORAGE (2007-2012)**



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