

CLIMATE ACTION RESERVE The Growing Potential for Carbon Offsets in Mexico

**NACW Pre-Conference Day** 





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- Pedro Morales, Associate with Case & White in Mexico City
- Rodolfo Lacy Tamayo, Undersecretary for Environmental Policy and Planning, Mexico Secretariat of Environment and Natural Resources (SEMARNAT)

#### **Reserve Offsets in Mexico**



- Climate Action Reserve is an environmental non-profit organization and carbon offset registry serving the US, Mexican, and Canadian markets and encouraging voluntary action to reduce greenhouse gas (GHG) emissions.
- In Mexico, the Reserve has adopted 5 carbon offset protocols for use in the voluntary market [agriculture, waste, forest and energy/ industrial sectors]
  - Mexico Livestock Project Protocol (2009)
  - Mexico Landfill Project Protocol (2009)
  - Mexico Forest Project Protocol (2013)
  - Mexico Ozone Depleting Substances Project Protocol (2015)
  - Mexico Boiler Efficiency Project Protocol (2016)



## Mexico Boiler Efficiency Protocol

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## Mexico Boiler Efficiency Project Protocol: Overview

#### Project Definition:

- Retrofitting existing boilers by installing new efficiency improvement technologies <u>OR</u> installation of new boilers that demonstrate greater efficiency than conventional alternatives
- Boilers must have capacity of 9.8 MW (33.5 MMBtu/h) or greater

#### Key Eligibility Criteria:

- Location: Mexico (any state)
- Performance Standard: Must demonstrate performance meets/exceeds energy efficiency thresholds corresponding to projects boiler threshold:
  - Boilers 9.8 to 100 MW (33.5 341.4 MMBtu/h) must be 80.5% or greater
  - Boilers > 100 MW (> 341.4 MMBtu/h) must be 82% or greater
- Boilers to be replaced under the "new boiler" project type must be no older than 35 years old. There is no upper age limit for the retrofit project type.

## Mexico Boiler Efficiency Project Protocol: Overview

#### Additional Eligibility Criteria:

- Start Date: A date chosen by the project developer after an initial start-up period of up to 6 months after the improved-efficiency boiler becomes operational,
- Crediting Period: 10 years. Only renewable if initiating new project activities (e.g. new retrofits)
- Regulatory Compliance: Meets all Federal, State, local laws
- Legal Requirement Test: Must not be legally required

#### Quantification

- Calculation of boiler efficiency is performed using the American Society of Mechanical Engineers Fired Steam Generators Performance Test Code (ASME PTC 4-2013), the British Standard 845 (BS-845) or the CONUEE Boiler Efficiency Tool
- Emission reductions are calculated using protocol equations

#### Monitoring, Reporting & Verification:

• Reporting and Verification Schedule: Minimum of annual reporting with flexible verification options of 12 or 24 months.





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CLIMATE ACTION RESERVE Mexico Destruction of Ozone Depleting Substances Protocol

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## Mexico ODS Project Protocol: Overview



#### **Project Definition:**

- Any number of one or more destruction events, destroying eligible ODS at a single destruction facility in Mexico over a 12-month period
- ODS eligible for destruction includes the following refrigerants:
  - CFC-11, CFC12, CFC-113, CFC-114
  - Must be sourced from Mexico
  - The same refrigerants as those eligible in Reserve's Article 5 Protocol, except for CFC-115.
    - Notably, CFC-115 was never produced nor imported to Mexico for use in appliances, and as such, CFC-115 is not eligible under this protocol.

#### Eligibility criteria:

- Location: ODS must be sourced from Mexico and destroyed at a facility in Mexico
- Regulatory Compliance: Meets all Federal, State, local laws
- Legal Requirement Test: Must not be legally required

## Mexico ODS Project Protocol: Overview



Additional Eligibility Criteria:

- Performance Standard is met by destroying one of the following ODS sources:
  - Used ODS refrigerant recovered from industrial, commercial, or residential equipment at servicing or end-of-life
  - Privately held stockpiles of used ODS that can be legally sold to the market
  - Mexican government stockpiles of seized ODS refrigerant that can legally be sold to the market
  - Mexican government stockpiles of seized ODS that cannot be legally sold to the market
  - Privately held stockpiles of virgin ODS refrigerant that can be legally sold to the market (no longer eligible. Was eligible for first 12 months, through April 28, 2016).
- Crediting Period: 10 years, non-renewable.
  - One-time issuance for all ODS emissions avoided over the 10-year crediting period.
- Start date: differs per type of project (mixed, non-mixed, aggregated) Monitoring, Reporting & Verification:
- Project may report and undergo verification annually or sub-annually.





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## Mexico Livestock Protocol

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## Mexico Livestock Project Protocol: Overview



#### Project Definition:

- Installation of Biogas Control System (BCS) that captures & destroys methane from anaerobic livestock manure management operations
- Baseline is: anaerobic treatment of livestock manure without destroying the methane

#### Key Eligibility Criteria:

- Location: Mexico (any state)
- Performance Standard: Must use BCS to capture gas onsite gas can be destroyed on-site/off-site technology neutral
- Pre-project scenario must be consistent with protocol's assumed baseline:
  - Existing farms: Must have anaerobic manure treatment ie lagoons;
  - New farms: Based on common system in region, animal type & farm size;

## Mexico Livestock Project Protocol: Overview



#### Additional Eligibility Criteria:

- Start Date: Must be submitted within 6 months of methane first produced in digester
- Crediting Period: 10 years, renewable (may apply for a 2<sup>nd</sup> Crediting Period)
- Regulatory Compliance: Meets all Federal, State, local laws
- Legal Requirement Test: Must not be legally required (As far as we know, no laws exist that require Biogas Control System in Mexico)

#### Monitoring, Reporting & Verification:

- Monitoring Plan: Sets frequency on data acquisition record keeping requirements instrument QA/QC – roles of individuals
- Annual reporting
- 3 verification options (12 or 24 month verification period)





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#### Mexico Landfill Protocol

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## Mexico Landfill Project Protocol: Overview

#### Project Definition:

- Use of *eligible qualifying device* for destroying methane collected at *eligible landfill*
- Eligible qualifying device: any device except passive flare
- Eligible landfill:
  - not subject to legal requirement to destroy methane;
  - not a bioreactor;
  - no controlled adding of liquid (other than leachate)

Performance Standard:

- Landfills must be venting (not destroying) methane gas to be eligible
- If already destroying gas using ineligible destruction device (e.g. non-qualifying passive flare or device installed prior to earliest allowable start date), must install new separate destruction device
  - If destroying gas in the baseline, credits only given for landfill gas destroyed beyond the max capacity of baseline destruction devices

## Mexico Landfill Project Protocol: Overview

#### Additional Eligibility Criteria:

- Location: Mexico (any state)
- Regulatory Compliance: Meets all Federal, State, local laws
- Legal Requirement Test: Must not be legally required (As far as we know, no laws exist that require Biogas Control System in Mexico)
- Start Date: Must choose start date within 45 days of landfill gas being first destroyed in project destruction device. Must submit project within 6 months of start date
- Crediting Period: 10 years, renewable (may apply for 2<sup>nd</sup> crediting period)

#### Monitoring, Reporting & Verification:

- Monitoring Plan: Sets frequency on data acquisition record keeping requirements instrument QA/QC – roles of individuals
- Annual project accounting, reporting & verification (at least every 12 months)





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#### Mexico Forest Protocol

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## **Objectives of the Protocol**

- Generate high quality credits that guarantee the environmental and social integrity of the project.
- Develop carbon forest projects that can incorporate multiple activities and different forest ownership structures.
- Ensure alignment of the protocol with the laws and norms of Mexico.
- Ensure coordination of accounting at the project and jurisdictional scale to avoid double-counting.

## **Primary Components**



- Social and environmental safeguards
- Various activities eligible under the same protocol
  - Avoided Conversion not eligible
- Tonne-year accounting
- Standardized methodologies
  and companion tools
- Aggregation guidance



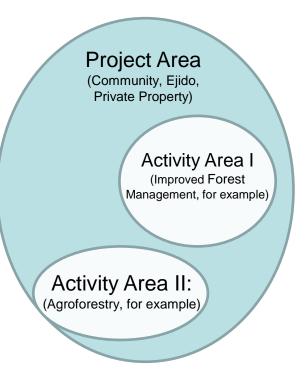
## **Project Area and Activity Areas**

<b>Project Area</b>
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Monitoring<br/>andPeriodic monitoring (6-year basis) for<br/>maintenance of forest cover outside ActivityReportingAreas as a control against leakage.

#### **Activity Areas**

Monitoring<br/>and<br/>ReportingAnnual monitoring of forest carbon stocks.Annual monitoring for native species.Periodic monitoring (6-year basis) for Unique<br/>Native Habitats.



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## **Environmental Safeguards**

- Maintain or increase carbon stocks
- Manage for native species
- No contiguous harvest areas larger than 5 ha without a 100 meter refugia
- The forest landcover of the Project Area cannot decrease



#### Social Safeguards

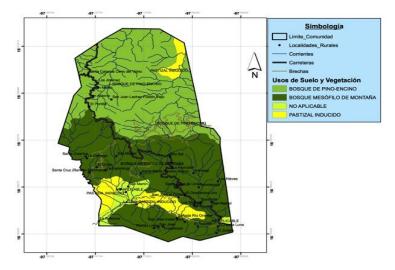
- Free, prior and informed consent
  - Anticipated costs and benefits
  - Project approval by community
- Meeting notification, participation and documentation
- Project governance
  - Project Coordinator





## Pilot Project: San Juan Lachao

- Series of meetings starting in 2013
- Activity Area: 2,388 ha
- Project Area: 13,290 ha
- 30 year contract
- Activities:
  - Improved Forest Management
  - Reforestation



# Social Benefits and Community Participation



- Knowledge of forest and environmental concepts
  - Meetings to discuss climate change, forest management, biodiversity, and the carbon project
  - Capacity building for inventory development
- Sustainable economic alternatives
  - 50 members of the community are employed by forest management
  - 6 community members are employed by the carbon project
- Participation in the carbon market
  - Anticipated to receive around 20,000 credits after the first verification





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# Carbon Programs and the Voluntary Market in Mexico



# Who is **Pronatura**?



- Civil Association with 35 years of experience.
- Mission: the conservation of flora, fauna and ecosystems, promoting development in harmony with nature.
- Pronatura México is part of the National Pronatura System, which is made up of regional and state independent branches.
- The strategies and actions of the National Pronatura System are oriented towards the conservation and sustainable development of regions and priority sites, in order to achieve the conservation of Biodiversity throughout Mexico and the world.

## **Be Carbon Neutral!**



 Neutralízate is the leading voluntary program promoting carbon neutrality in Mexico, created in 2008 by Pronatura México.

#### • Objectives:

1.- Seeks to have people, events and companies quantify, reduce and mitigate their GHG emissions in an effort to solve the problem of climate change.

2.- Supports Mexican indigenous communities by providing advice and support to develop forest carbon projects and sell certified offsets in the voluntary carbon market.

## The forestry sector and Public Programs in Mexico



- Link to governmental policies and interest
  - Not a large priority for municipal and state governments
  - Federal government push for sustainable management, conservation, and investment
- Public policy programs and subsidies have supported the Forestry Sector
  - The development of a satellite inventory and the creation of a sound legal framework
  - Payment for Environmental Services / Payment for Hydrological Services

# Pronatura's role in the voluntary carbon market in Mexico



- IN FIGHTING POVERTY: The transaction volume of voluntary forestry carbon credits in Mexico is approximately 60 thousand tons of CO2-e per year.
  - Pronatura has been responsible for nearly 60% of the volume.
  - 2008-2017: Pronatura has sold over 200 thousand tons of CO2-e, resulting in more than 20 pesos for the 11 communities that participate in the project.
  - Communities have used this revenue to pay for many activities such as fire protection, pruning, nurseries, habitat restoration, rainwater collection, investment in transportation and medical supplies etc.
  - Scenic beauty, recreational enjoyment and ecotourism projects
- IN BIODIVERSITY CONSERVATION: Sustainable management of the forest has created, maintained and improved the habitat for numerous species of plants and animals

## The Legacy of CAR Mexican Forest Protocol



The methodology and tools developed in this project will become part of the local knowledge of many regions and the global community.

It will affect the national public policy through the influence in Mexican Standards and Regulations of the General Law on Climate Change (LGCC), among others.





# SAN JUAN LACHAO



# The pilot project



- Supported work in the community and built on already established local capacities
- Learning experience for community members
- Strengthens the sustainable management of natural resources
- Complements federal
  programs



### Future opportunities for project pro developers in the Mexican carbon market and the second

Future opportunities exist for different reasons:

- Legal framework
- Support of social organizations
- New public policies
- More awareness and information to companies and individuals

## Social Benefits of Carbon Projects nat

- Health and happiness
- Integration and community organization
- Capacity building
- Women and gender equality
- Youth participation
- We are three years into the program and have witnessed improvements in ecosystem conditions, quality of life for the community members, and a sense of pride for the recognition of their work, which has been acknowledged at state, national, and international levels.

## Some repeat customers





# Thanks to CAR Forestry Protocol project in Oaxaca



- Mexico has an effective, inclusive and cheaper replicable model that complies with Mexican and international law for communities that have forest land to carry out forest carbon projects and generate the sale of offsets
- Supports revenue for communities to invest in schools, hospitals, etc. and improve the quality of life and of course continue sustainable forest management.
- Thanks to these efforts, thousands of dollars and eventually millions will be invested in rural and indigenous communities, which in some cases will allow a generation to improve their standard of living while assuring the conservation of their natural resources.



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## Verification of Forest CO<sub>2</sub> Capture Projects in Mexico

Background, experience, challenges

Biól. Alberto J. Ramírez Reyes – ANCE, A. C.

## 1. ANCE – Who, why and for what

**ANCE, A.C.**, acronym for Standardization and Certification Association (Asociación de Normalización y Certificación, in spanish), is a nonprofit entity in Mexico since 1992 whose primary activity is to evaluate and certify compliance with national and international standards and regulations.



## 1. ANCE – Who, why and for what



ANCE's activities span from such sectors as electronics, electromagnetic compatibility, ISO standards, medical and food compliance, and natural resources management like **Sustainable Forestry, supply chain of Wood products and CO2 capture projects**, among many others.



## 1. ANCE – Who, why and for what



Currently, ANCE works with national and international entities like SEMARNAT, CONAFOR, ISO, Global GAP, ema, ANSI, and has mutual recognition agreements with the U.S., Ecuador, Korea, Germany, China, Spain and others.

Finally, we have offices in Mexico in Guadalajara, Tijuana and Mérida, as well as an electrical tests lab in Apodaca, Nuevo León; a representational office in Washington D.C., and soon in China.

All of this makes ANCE, A.C. a globalized, multi-sectoral, and trustworthy institution.





Empowered lives. Resilient nations.





### 2. Community Forestry in Mexico

Forestry management in Mexico is mostly achieved through communal activities since land property is primarily communally owned and is represented by the legal entities of ejidos and communal goods, as well as private property, which surface under management are the lesser in size and number



Raramuri women from an ejido in Chihuahua, Mexico. Photo by Eréndira López



#### **Certification of Sustainable Forest Management**

Mostly in temperate forests and rainforests under communal management



#### Certification of Sustainable Forest Management Conservation of biodiversity and gene pool of animals and plants

*Iguana versicolor* preserved in a private property in Yucatan, Mexico. Photo by Alejandro Nápoles





#### **Certification of Sustainable Forest Management**

Social improvement, inclusion of women and native people as well as vulnerable people, maintenance of the social tissue, legality and transparency in profit distribution

Raramuri woman from Chihuahua, Mexico working in complementary activities. Photo from ANCE stock



ANCE's Certification as linkage between communities and CO2 standards of Project verification Connecting ejidos and communities with PRONATURA and CAR





Promotes the Carbon Market in Mexico

#### 4. Experience with CAR Protocol



- Recognition of CAR Protocol as a strong instrument for community development through conservation of natural resources and biodiversity
- Recognition of CAR Protocol as an instrument similar to those existing in Mexico like PSA (Payment for Environmental Services), National and International Certificates of Sustainable Forestry Management
- Connecting communities certified with Sustainable management to PRONATURA and CAR
- Opportunities of social improvement in Mexico's rural areas benefiting both mestizos and indigenous peoples

- CLIMATE
- First Project verification was conducted on November 7, 2016 in the community of Bienes Comunales de San Juan Lachao, Oaxaca, one of Mexico's most interested communities pursuing objectives in line with the CAR Forest Protocol.







#### A Project Technician re-marking the trees





One of ANCE's verifiers validating trees measurements





We had a long discussion of protocol parameters in field with Project techinicians, CAR Staff and ANCE Verifiers





Near the end of first verification fieldwork, CAR, San Juan Lachao and ANCE personel with the Project plot map

## 6. Future opportunities for verification in the CO2 Market in Mexico

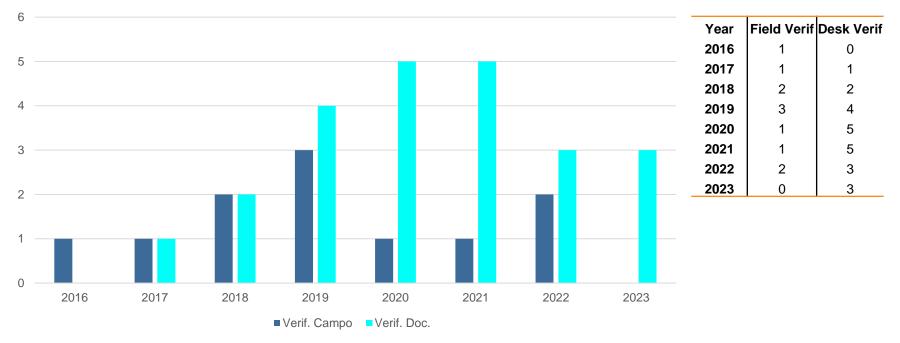


From 2011 to 2016 we have certified 151 sites for Sustainable Forest Management in 11 states of Mexico covering a surface of 910,000.00 ha

## 6. Future opportunities for verification in the CO2 Market in Mexico



#### Number of Verifications under CAR Protoco.



We already have knowledge of at least 3 projects in development, one in the state of Hidalgo, and another two in Puebla.

## 7. Potential development of vulnerable populations through instruments like C02 markets



- Additional revenue for communities with forest management or with forest in their lands
- Maintenance of the social tissue
- Prevention of migration to Mexico's cities or to the USA
- Settlement of reference points for future public policies regarding CO2 capture projects
- Opportunities of social improvement in Mexico's rural areas benefiting both mestizos and indigenous peoples

#### Thanks for your Attention! ¡Gracias por su atención!



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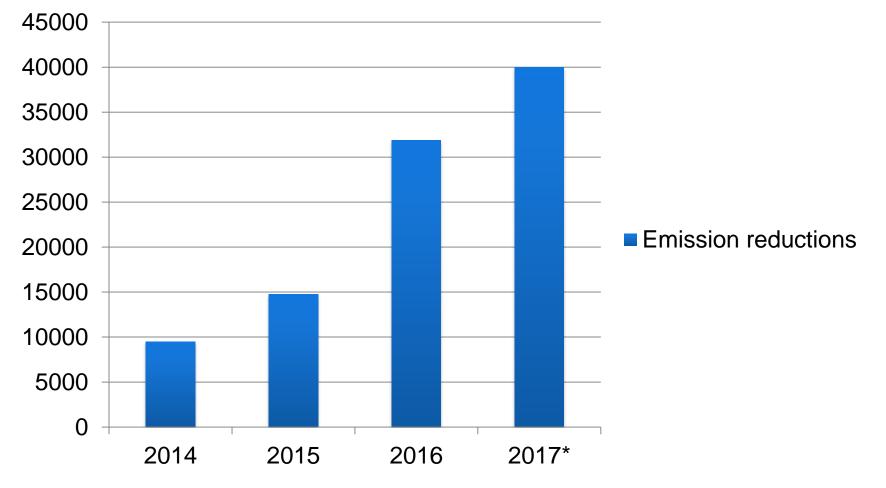
## The State of the Mexican Voluntary Market

The path towards the Mexican ETS

## Mexico Voluntary Market



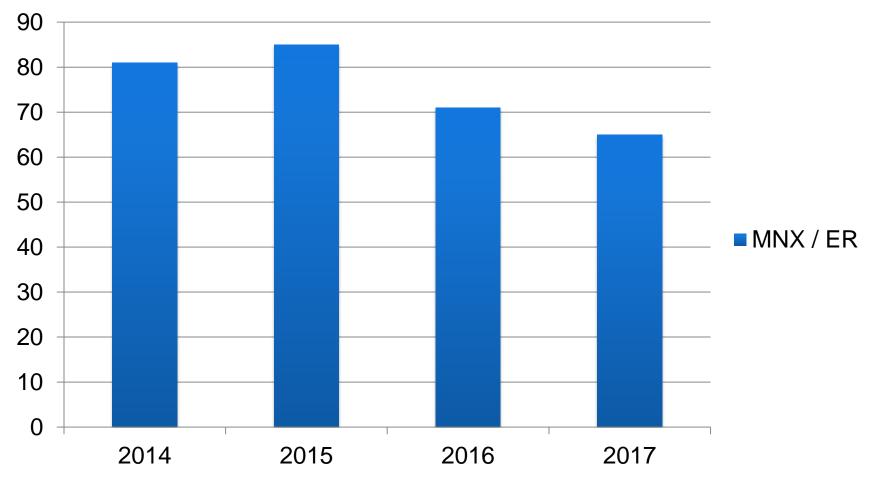
#### **Emission reductions**



### Mexican Voluntary Market



**MNX / ER** 



## **ETS Market Exercise**



- Developed by SEMARNAT and MÉXICO<sub>2</sub> to create market capabilities in light of upcoming Mexican ETS in 2018.
- Reproduces all ETS components: allowances, secondary market, abatement options, offsets.
- Advisory committee: QC, ON, CA, JA, CDMX, NL; ICAP, EDF, IETA and CESPEDES.
- 81 participating companies throughout the country.



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#### **Legal Framework**

Pedro M. Morales

19 April 2017

## **General Law on Climate Change**

- June 6, 2012
- Mainly a programmatic law, establishing aspirational goals, with few sanctions
- Establishes the obligation to create a registry of GHG
- Art. 92 mentions among economic instruments to be implemented market instruments defined as concessions, authorizations, licenses and permits that correspond to pre-established volumes of emissions, or that provide incentives to the performance of actions of GHG reductions providing alternatives that improve the relation cost-efficiency of the same. The rights derived from such market instruments are to be transferable, not taxable and will be of public interest.





- Articles 94 and 95 attend to a voluntary market:
- SEMARNAT, along with the Commission and the Council may establish a voluntary carbon market with the purpose of promoting GHG emission reductions at the least cost, in a measurable, verifiable manner.
- Voluntary carbon market may be linked to foreign and international markets, pursuant to secondary provisions to be issued.
  - Art. 37 recognizes programs and mitigation instruments of Kyoto Protocol and other duly certified by an internationally recognized organization. Secondary provisions need to be developed to enable such recognition.
- Attends to the possibility of creating carbon taxes.





- 2014 Tax reform (IEPS), derived from GLCC
- Tries to establish a carbon price, attending to CO2 equivalent of fossil fuels
- Tax may be paid with carbon credits approved by UNFCCC – secondary provisions to be issued to enable this option.

### **Regulations to the GLCC**

- October 28, 2014
- Establishes the national registry of GHG emissions
  - Lists sectors that need to report.
  - Report threshold is 25,000 tons/CO2 equivalent per company
  - Technical aspects to be detailed in secondary provisions
  - Requires technical verification of emissions, depending on volumes of CO2 equivalent
- Art. 29 recognizes as valid GHG reduction certifications obtained from international or foreign entities, as well as from organisms accepted or recognized in international carbon markets.



- 14/08/2015 Ministerial decree was issued regarding the GHG and their warming potential, for effects of reporting
- 03/09/2015 Ministerial decree was issued in order to establish technical characteristics and formula for the application of methodologies for the calculation of GHG
- 08/09/2015 Ministerial decree was issued to establish methodology for direct measure of CO2 emissions
  - Should have been issued as NOMs

### Clean energy requirements

- Law of the Electricity Industry
- Part of the Energy Reform
- Introduces clean energy certificates (CELs)
- Unclear how this will interact with a potential Mexican cap and trade
- CELs requirements have been adapted by means of other laws, regulations and secondary provisions

## **Energy Transition Law**

- December 24, 2015
- Part of the Energy Reform
- Further develops CELs rules
- SEMARNAT may:
  - issue NOMs for GHG regarding electricity sector and establish flexible mechanisms for compensation to comply with limits of NOMs
  - Baseline for CO2e for the electricity sector
  - Publish yearly report of GHG per generating facility

# Legal changes required for cap and trade and linkage to other markets

- Amendment to the GLCC to include cap and trade and general rules, to be later defined by secondary provisions
- Avoid duplicity with CELs
- Decrees for registry of GHGs to be issued as NOMs
- Create rules to recognize other markets and certifications
- Carbon price



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## The Growing Potential for Carbon Offsets in Mexico

NACW Pre-Conference Day