Soluciones innovadoras en energía | Instituto de Investigaciones Eléctricas

Carbon Capture, Utilization and Storage (CCUS) Roadmap for Mexico

SENER
SECRETARÍA DE ENERGÍA

Dr. José Miguel González Santaló
Dr. M. Vita Peralta Martínez
Dr. Zdzislaw Mazur Czerwiec

November 2015

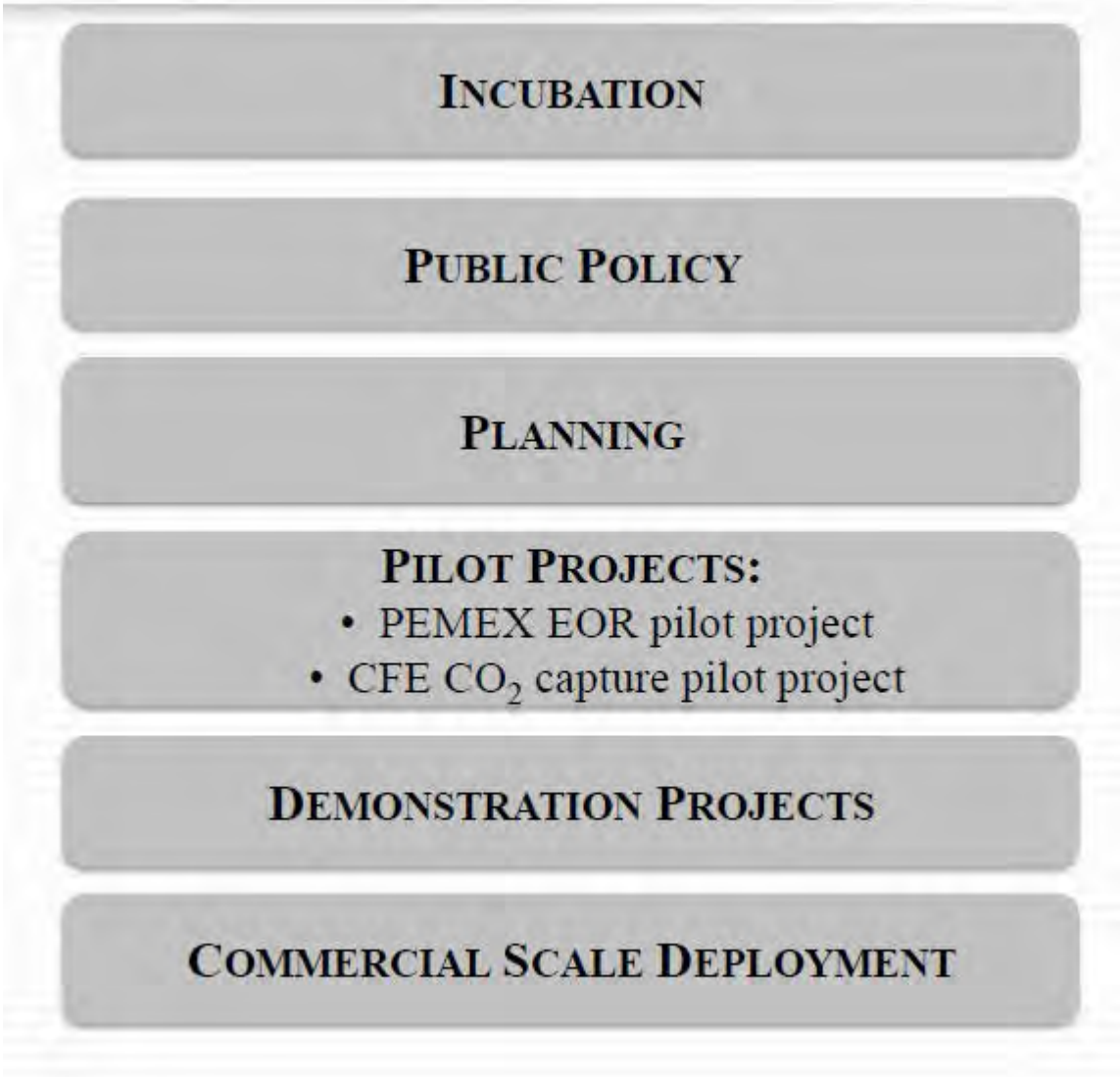
CCUS Road Map for México

Objectives

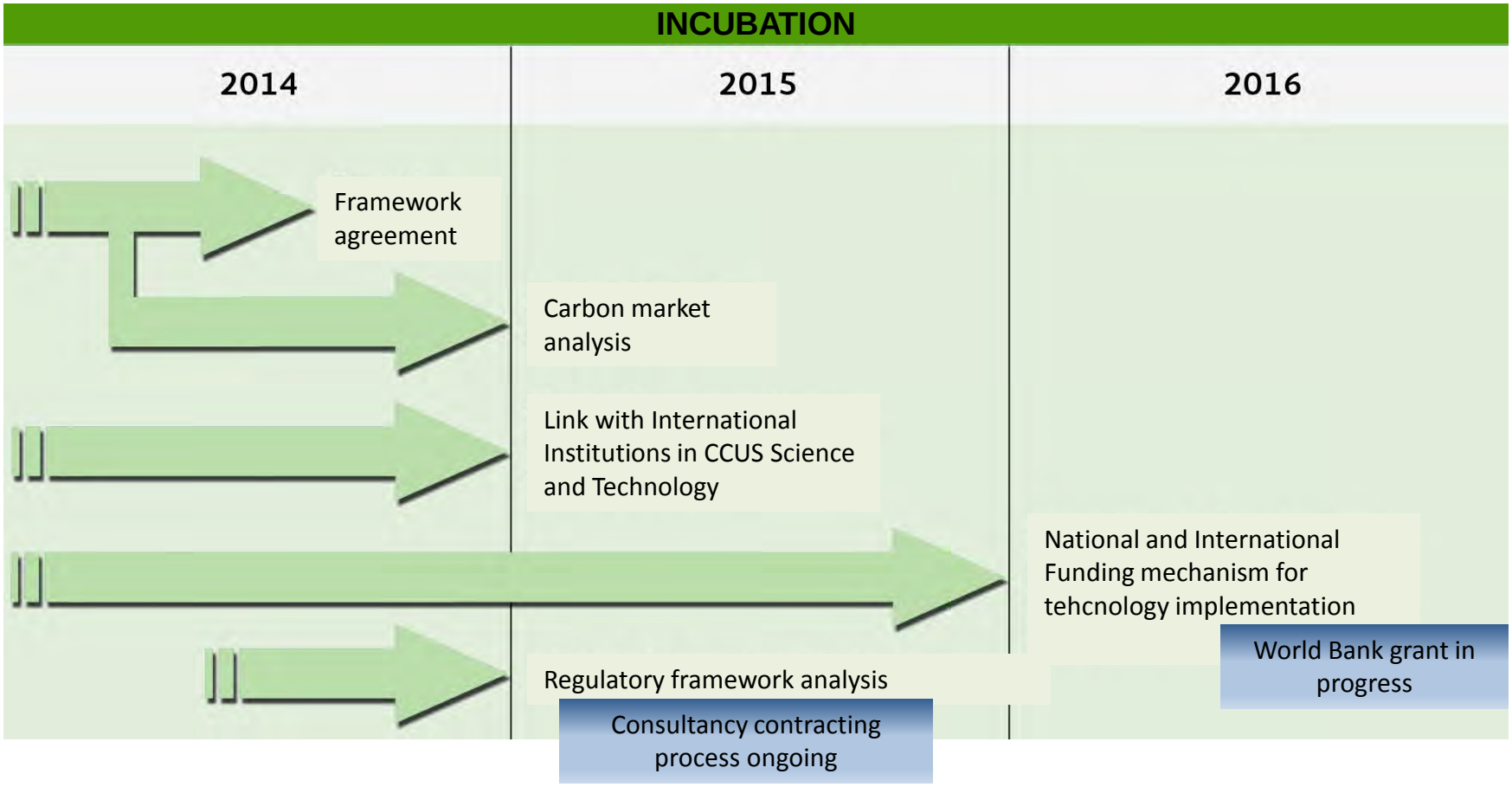
- To design the official roadmap for CCUS, from incubation to commercial scale
- To establish a systemic and orderly basis for CCUS resources management and assimilation of technological knowledge
- To promote economic and regulatory incentives for technology implementation
- To promote emissions and carbon markets in which Mexico can participate
- To coordinate research activities on CO_2 regulation, capture, transport, use and storage

CCUS Roadmap Mexico

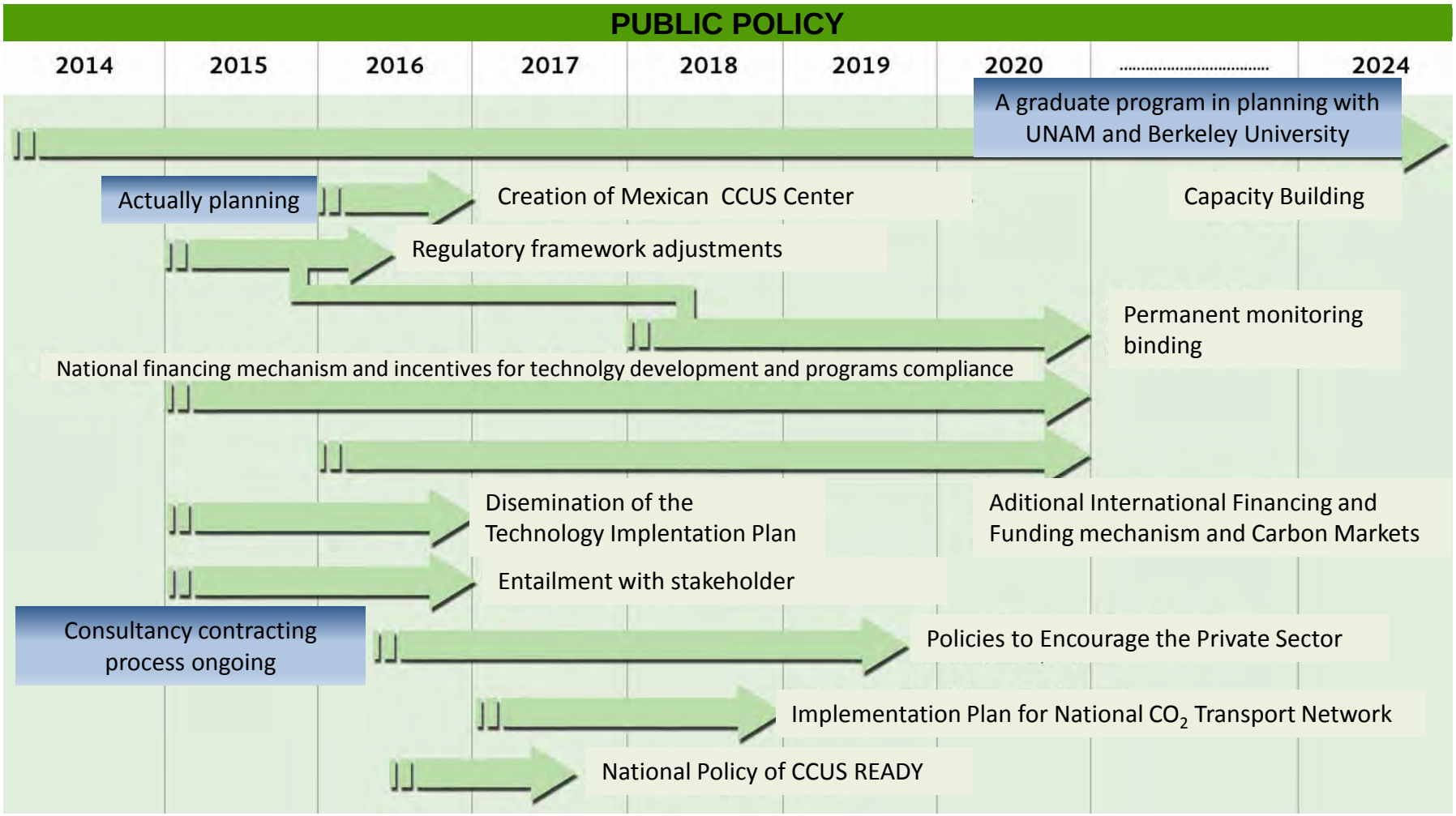
CCUS ROADMAP ACTIVITIES



Road Map (Incubation)

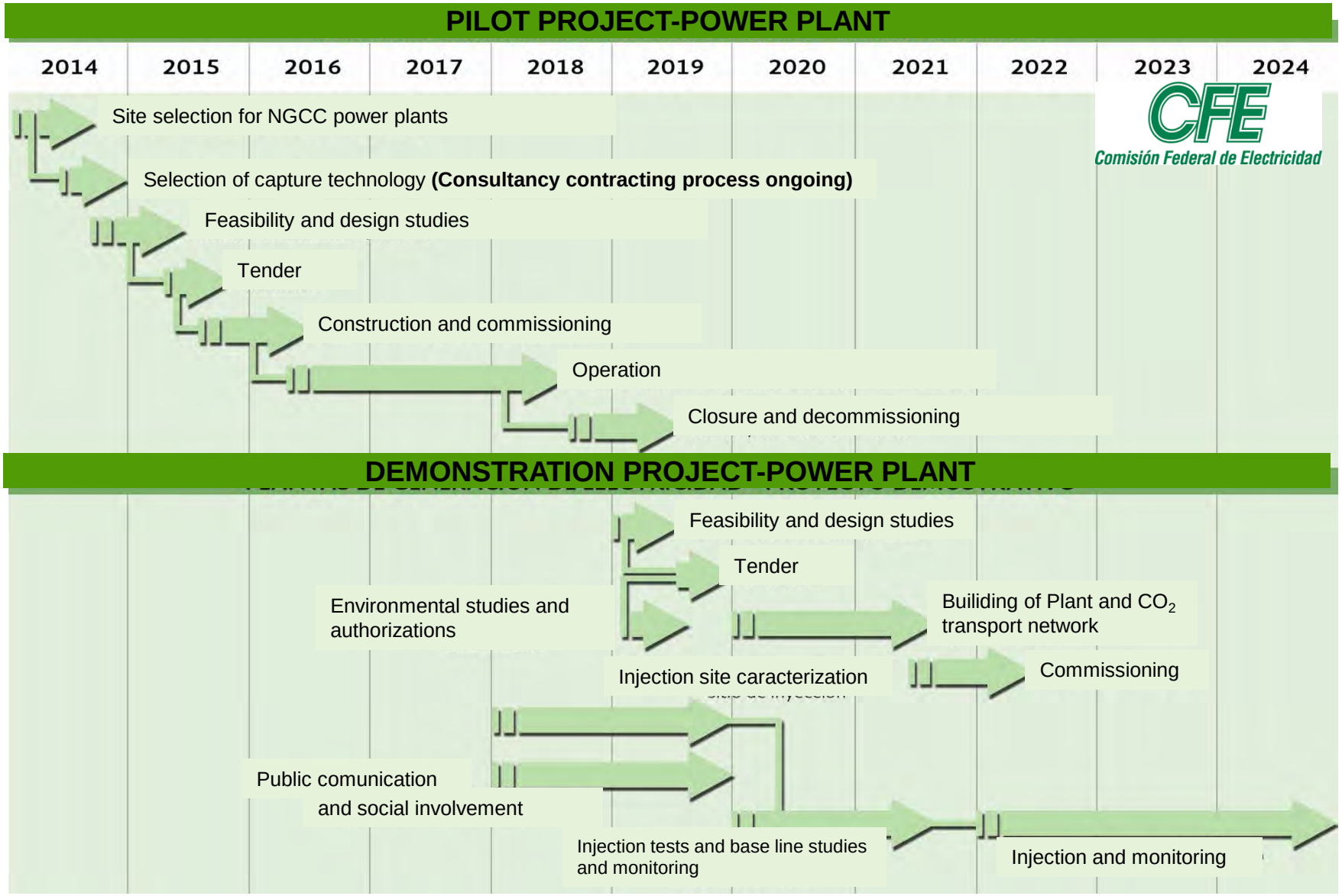


Road Map (Public Policy)



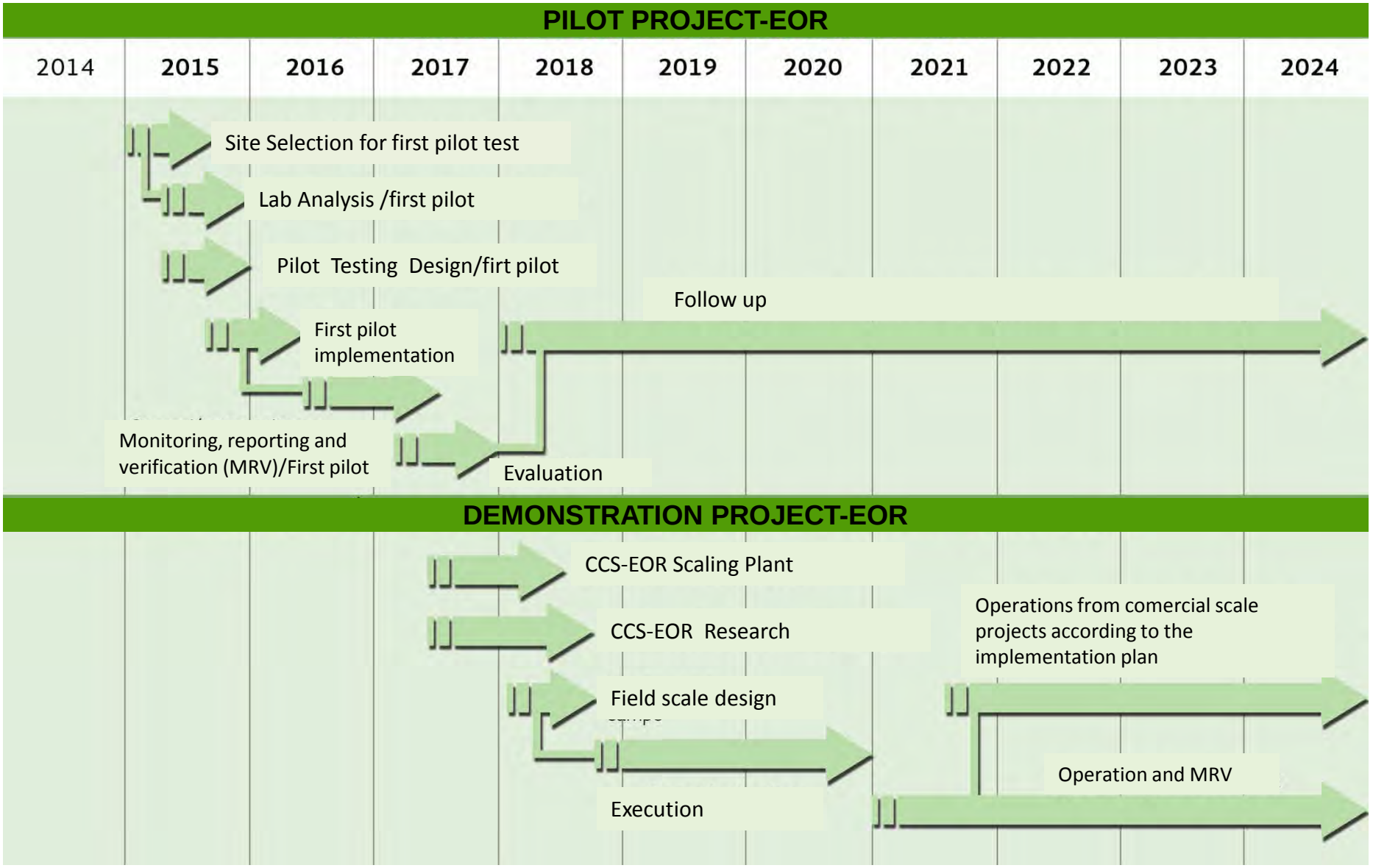
Road Map (Planning)

Road Map
Pilot and demonstration project Power Plants

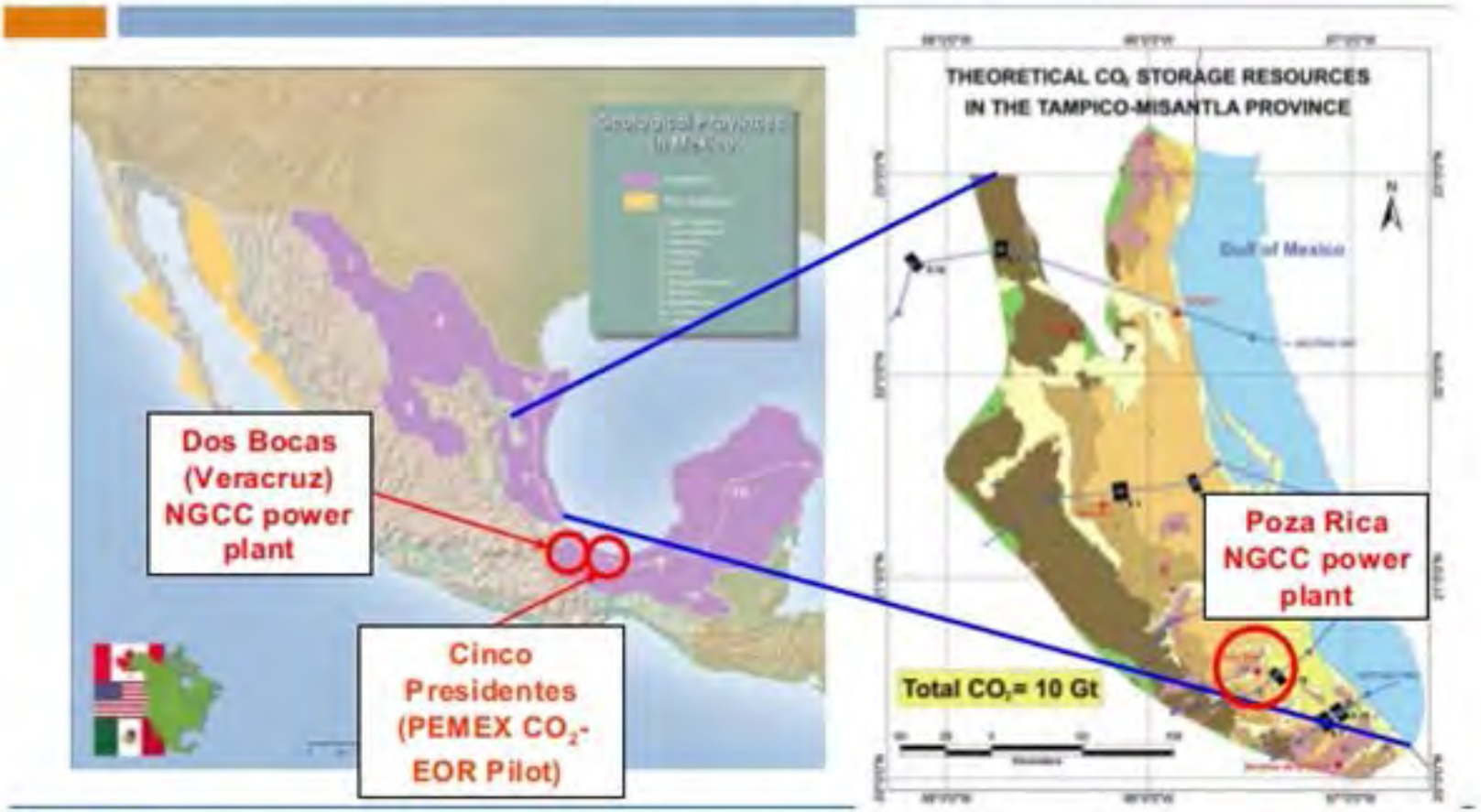


Road Map

Pilot and demonstration project EOR



Location of capture and CO_2-EOR pilot projects

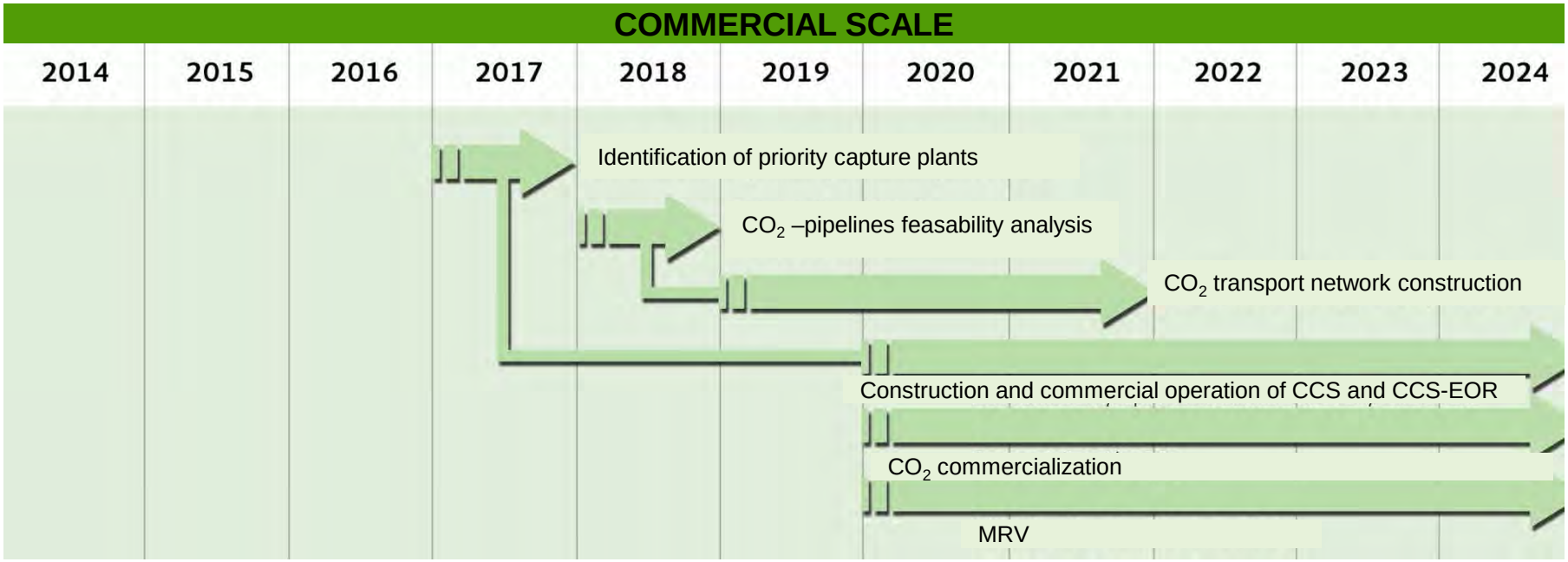


SUPPORTED BY:

APEC Asia-Pacific Economic Cooperation Secretariat

GLOBAL CCS INSTITUTE · SENER · CFE · PEMEX · FECIT

Road Map (Commercial Scale)



Key Remarks

- CCS will play an important role for the transition to a low-carbon economy
- To develop and strenghten research and technology capabilities for CCUS in Mexico, and to promote international collaboration with leading research institutions
- To develop a suitable policy and financial framework for CCUS implementation
- To cooperate and to get support from international organizations for CCUS knowledge sharing, capacity building funding, and public engagement

Works on CCS at IIE

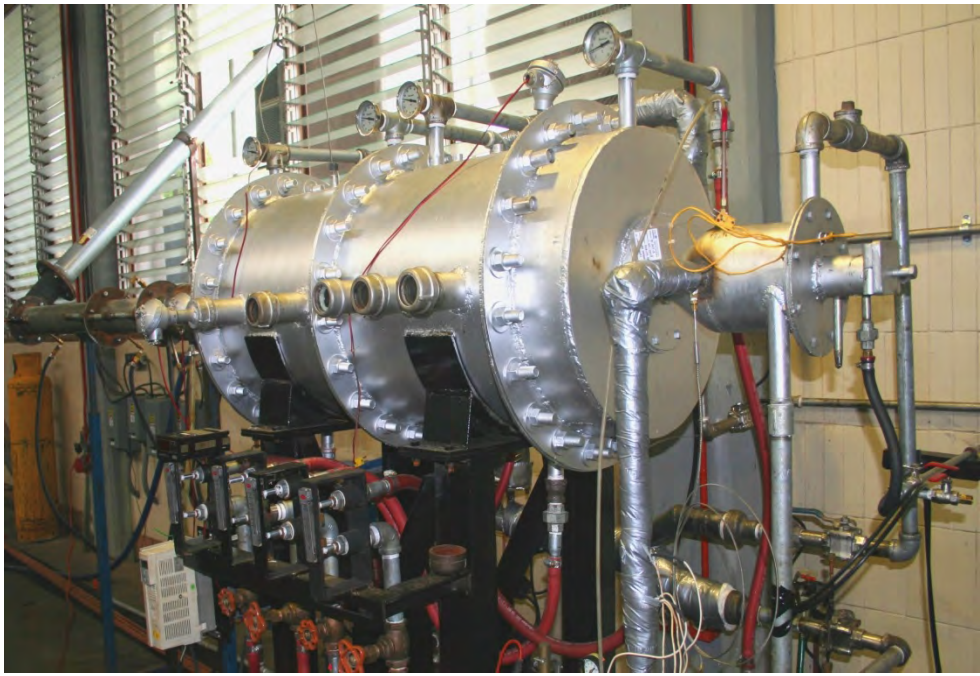
POST-COMBUSTION PROGRAM AT IIE(Electrical Research Institute)

- A bench scale absorption unit to test different amine solvents to know the behaviour of these and study the different variables and parameters involved in the process of CO_2 capture

- Absorber with 1.7 m high and 4 inches diameter
- Stripper with 2.15 m high and 5 inches diameter
- Both columns made with borosilicate glass Schott® Duran 3.3
- Packing polypropilene pall ring 5/8 inches

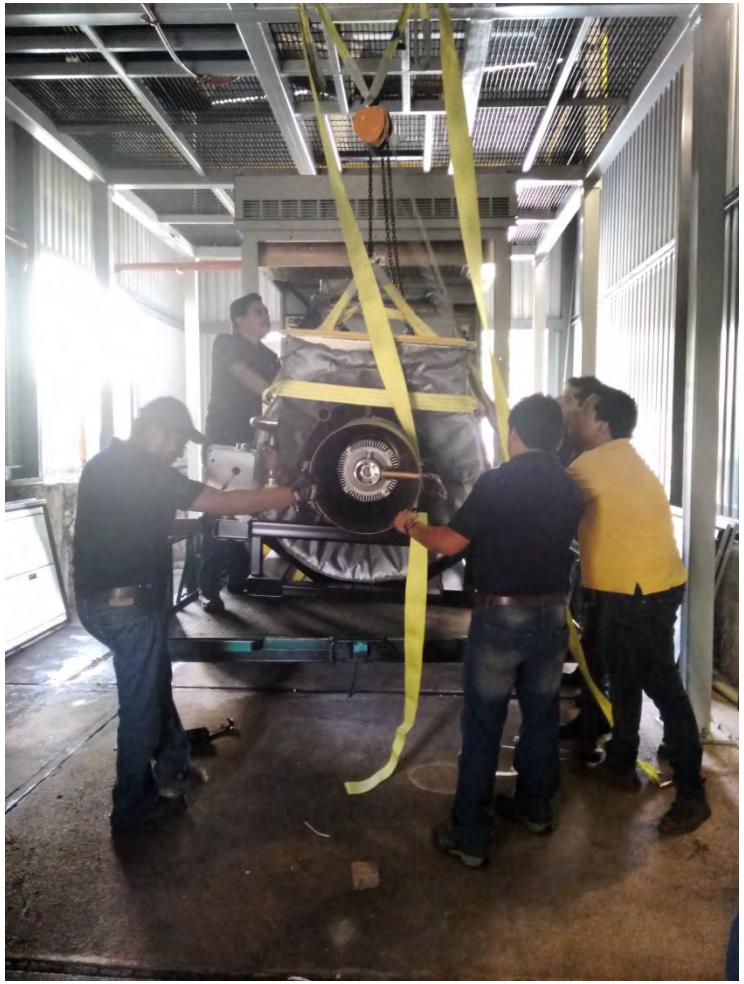
Works on CCS at IIE
OXYCOMBUSTION FURNACE AT IIE

- Part of IIE's strategic program for CCS
- 30 KW thermal
- Oxygen delivered by oxygen bottles
- Originally CO2 and steam were also externally produced to simulate recirculation. Now recirculation is being implemented
- Purposes:
  - Hands on experience with oxycombustion
  - Characterize the combustion process
  - Assess applicability to Mexico



Works on CCS at IIE gas turbine

- A small gas turbine to investigate the behaviour in operational conditions using biofuels, CO_2 capture, CO_2 recirculation and the use in cogeneration.



PRE-FEASIBILITY STUDY by Nexant

Objective

To develop a conceptual design for a capture pilot plant, to test three different technologies, this pilot plant will be located at the 160 MW Poza Rica NGCC (retrofitted plant)

Thanks for your attention