

CCS ACTIVITIES IN MEXICO

2nd SYMPOSIUM ON CARBON CAPTURE AND
STORAGE

INTERNATIONAL ENERGY FORUM
GLOBAL CCS INSTITUTE

31 May – 01 June, Algiers, Algeria

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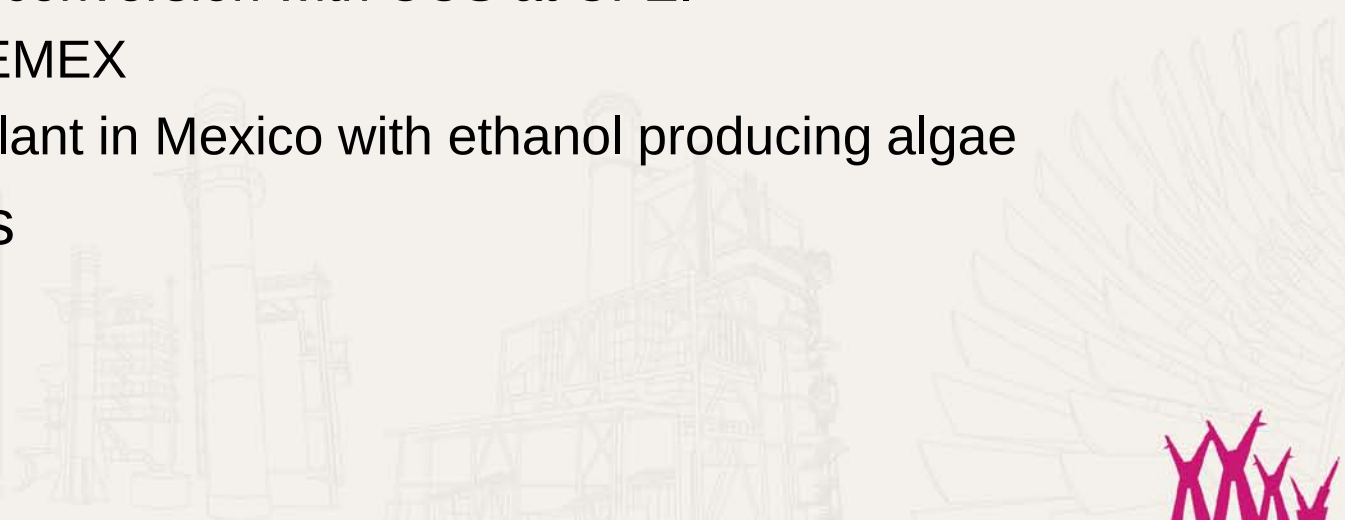
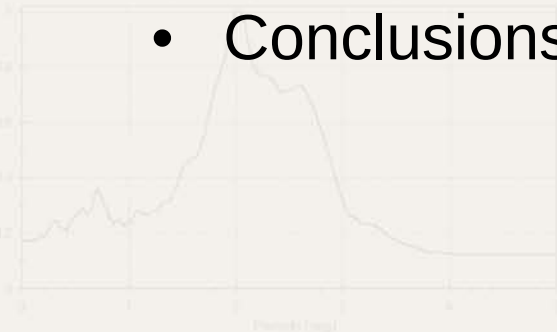
SENER - IIE

Espectro de respuesta del sismo de Michoacán
(19 de Septiembre de 1985)



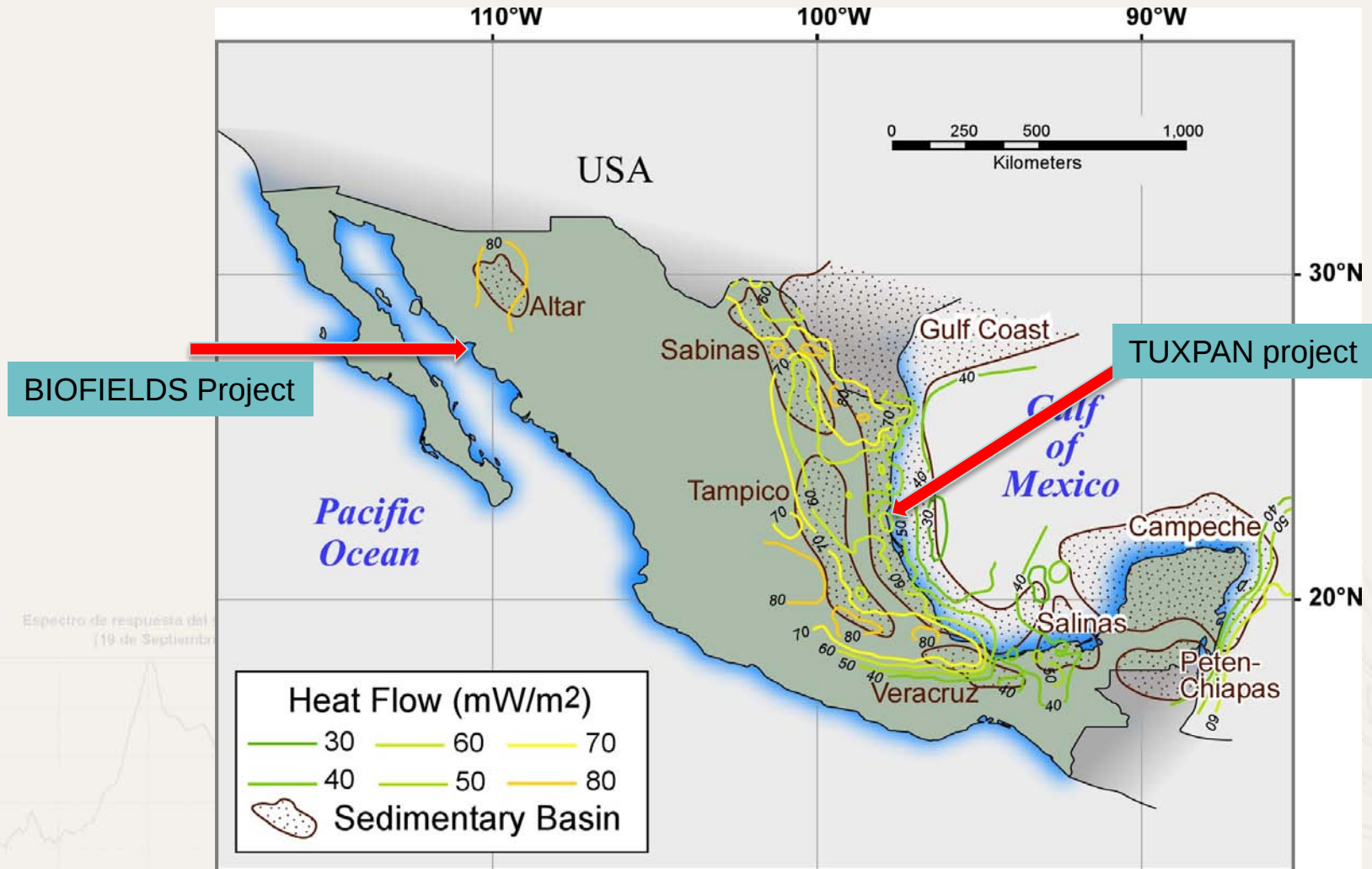
- CO2 emissions in Mexico
- R&D programs
 - Oxycombustion furnace at IIE
 - Post combustion program at IIE
 - EOR tests at IMP
- The main projects
 - Oil to coal conversion with CCS at CFE.
 - EOR at PEMEX
 - Biofields plant in Mexico with ethanol producing algae
- Conclusions

Espectro de respiración del
(19 de Septiembre de 1985)



- 600 million tons of CO2 per year
- 400 million tons of CO2 from fossil fuels
 - 130 from power plants
 - 70 from oil and gas industry
 - 60 from industry
 - 140 from transportation

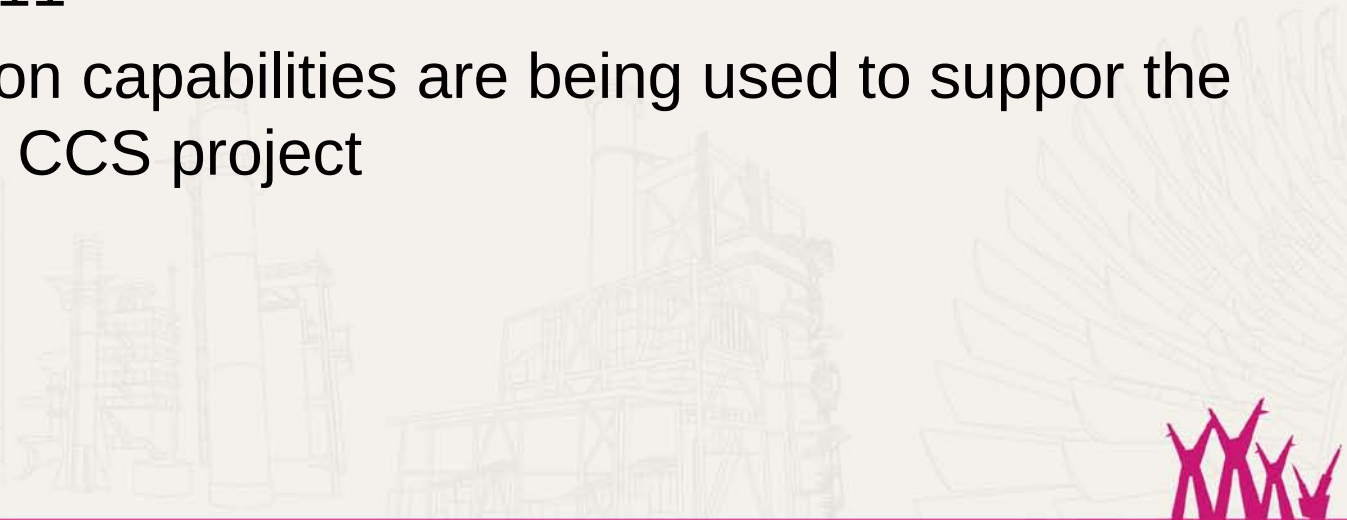
Mexico has developed a Strategic Plan for Climate Change that covers short term actions and longer term R&D. Some medium term actions depend on international funding agreements for GHG reduction projects and are looking forward to a successful COP 16 meeting



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

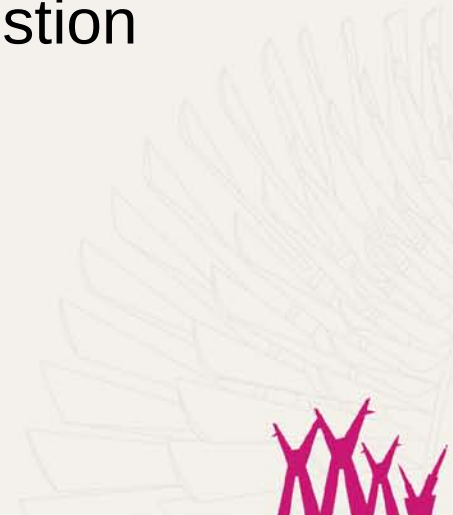
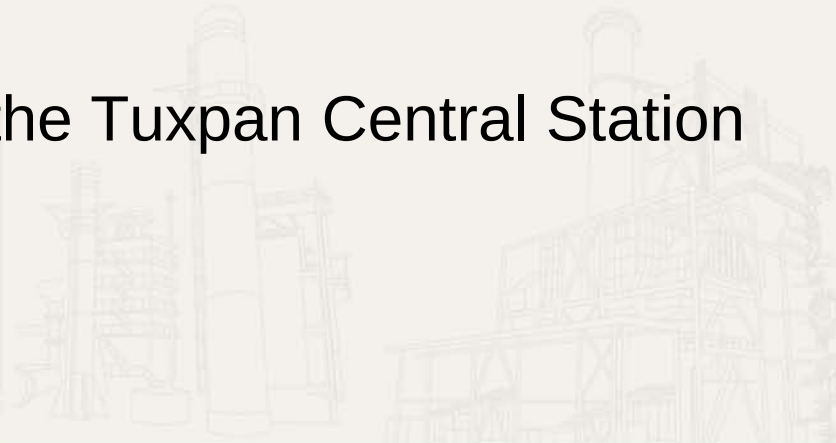


- Developed calculation and desing capability
- Designed a laboratory scale for absortion CO₂ separation to be built this year
- Pilot installation in one of CFE's Power Plants for technology assessments and hands on experience, to be built in 2011
- The calculation capabilities are being used to suppor the Utility in their CCS project



- CFE is planning to convert six 350 MW units from oil to coal
- CO₂ capture is being considered to transfer the CO₂ to PEMEX for EOR.
- The CO₂ to be captured is around 2.8 million tons per year per unit
- The capture system would be a postcombustion absorption
- The site is the Tuxpan Central Station

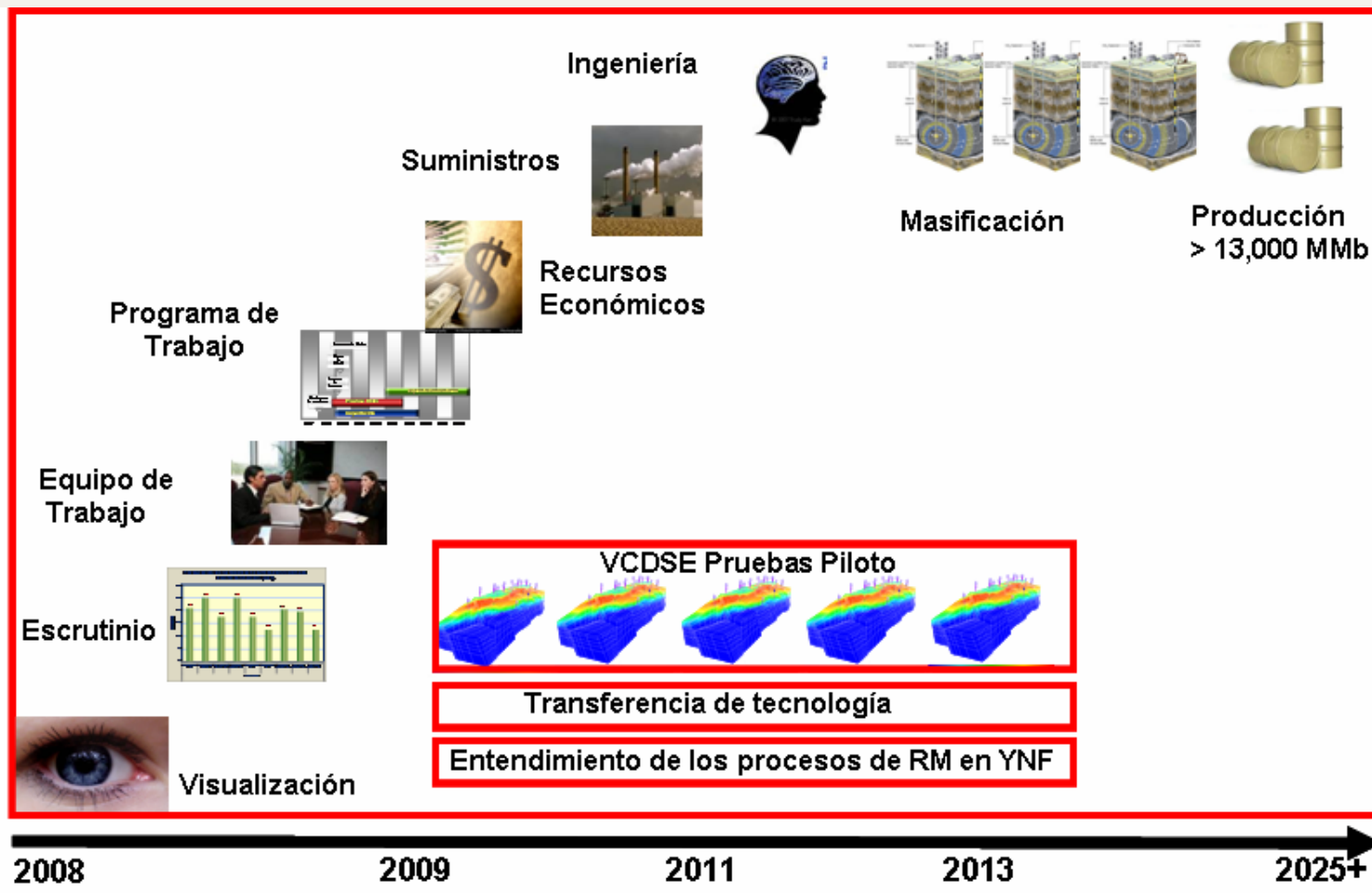
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- PEMEX has decided to use CO₂ EOR to increase oil production
- There is a pilot project at “Cinco Presidentes” separating CO₂ from an Ammonia plant
- Massive implementation is expected in 2013
- The CO₂ requirements are around 400 million tons per year
- The sources are yet to be identified

Espectro de respuesta del sismo de Michoacán





- Biofields, with technology support from Algenol, is planning an Ethanol producing plant next to the Puerto Libertad Power Station
- The project will use around 1.0 million tons of CO₂ per year from the power plant
- The capture process is yet to be defined
- This can be considered a 3rd
- generation biofuel process
 - Does not compete with food production
 - Uses sea water and desert land



- CSLF collaboration has been extremely useful to México
- EOR is one of the main drivers for CCS
- Initiatives by CMM and IIE, Government's and CFE's desire for international leadership and pressure from SEMARNAT are pushing CCS forward
- Two main large projects. CCS in a power plant and CO2 use for algae growth.
- Resources are limited and are slowing down some projects
- One project with an innovative scheme to produce ethanol



THANK YOU !!

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