

September 2022

4  
Years



**EOR TCP**

Enhanced Oil Recovery  
Technology Collaboration Programme

EOR TCP Status 2022 // Dr. Torsten Clemens

IEA Vernetzungstreffen, Vienna, Austria



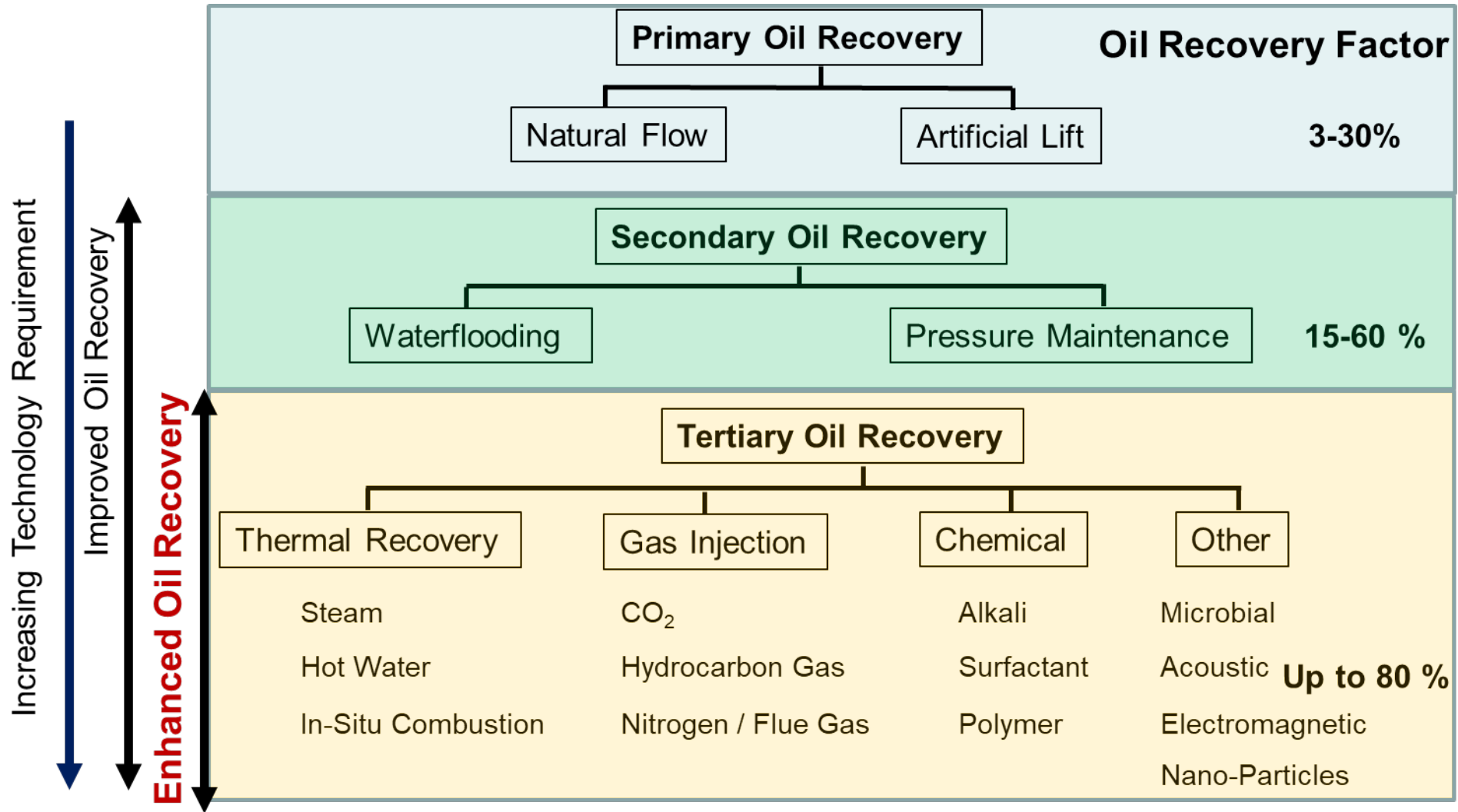
# Technology Collaboration Programme on Enhanced Oil Recovery

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- Founded 1979
  - Participating Countries

Australia, Austria, Canada, China, Colombia Denmark, France, Japan, Mexico, Norway, Russia, South Korea, United Kingdom, United States, Venezuela
  - Delegates to the Executive Committee represent
    - Governmental departments and agencies: Australia, Mexico, Norway, UK, USA
    - Industry / (national) oil companies: Austria, China, Colombia, Venezuela, Russia
    - Research Institutes / Universities: Canada, Denmark, France, Japan , South Korea
  - The aim of the programme is to facilitate co-operative research, development, demonstrations and exchange of information regarding EOR within the participating countries.
  - EOR TCP was extended until 2025
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# What is Enhanced Oil Recovery?





## EOR TCP tasks


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- Studies of fluids and interfaces in porous media
  - Surfactants and polymers
  - Thermal recovery
  - Gas flooding techniques
  - Dynamic reservoir characterisation
  - Emerging technologies
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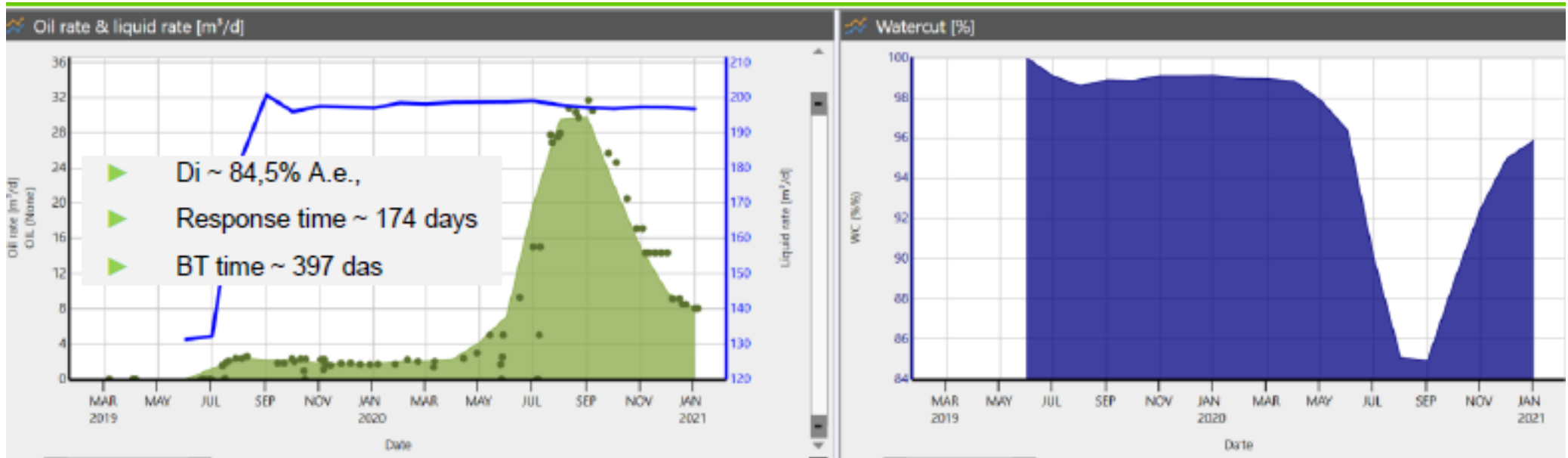
# Relevance of EOR TCP to the IEA mission

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- **Energy security**  
increasing the recovery of resources by 5-50 %
  - **Economic development**  
extension of the life-time of hydrocarbon fields
  - **Environmental awareness**  
extending life-time of hydrocarbon fields instead of creating new infrastructure, carbon capture and storage, reduced energy use to produce hydrocarbons
  - **Engagement worldwide**  
contracting parties from all continents
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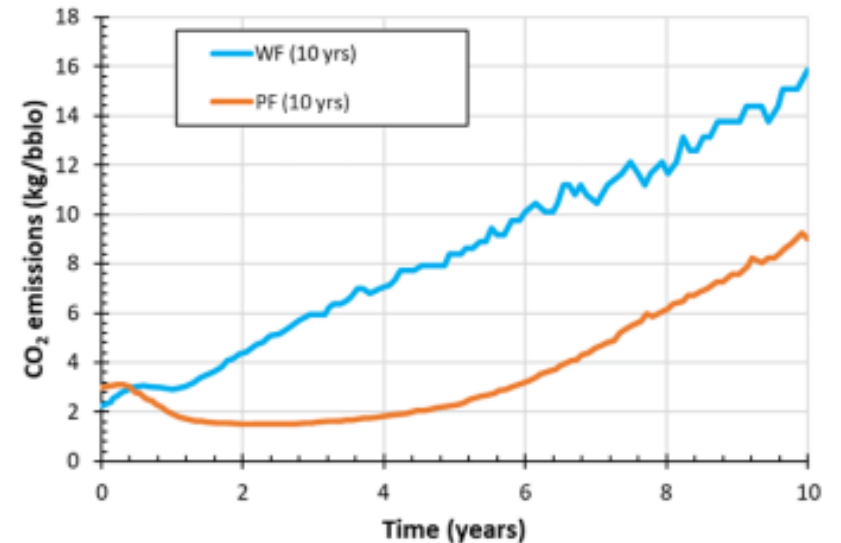
## Example for Austria

- Substantially increased resource recovery
- Reduced water cut – increased energy efficiency
- Extension of field life, sustained economics of the region



# Contributions of EOR TCP to Net Zero 2050 (1 of 3)

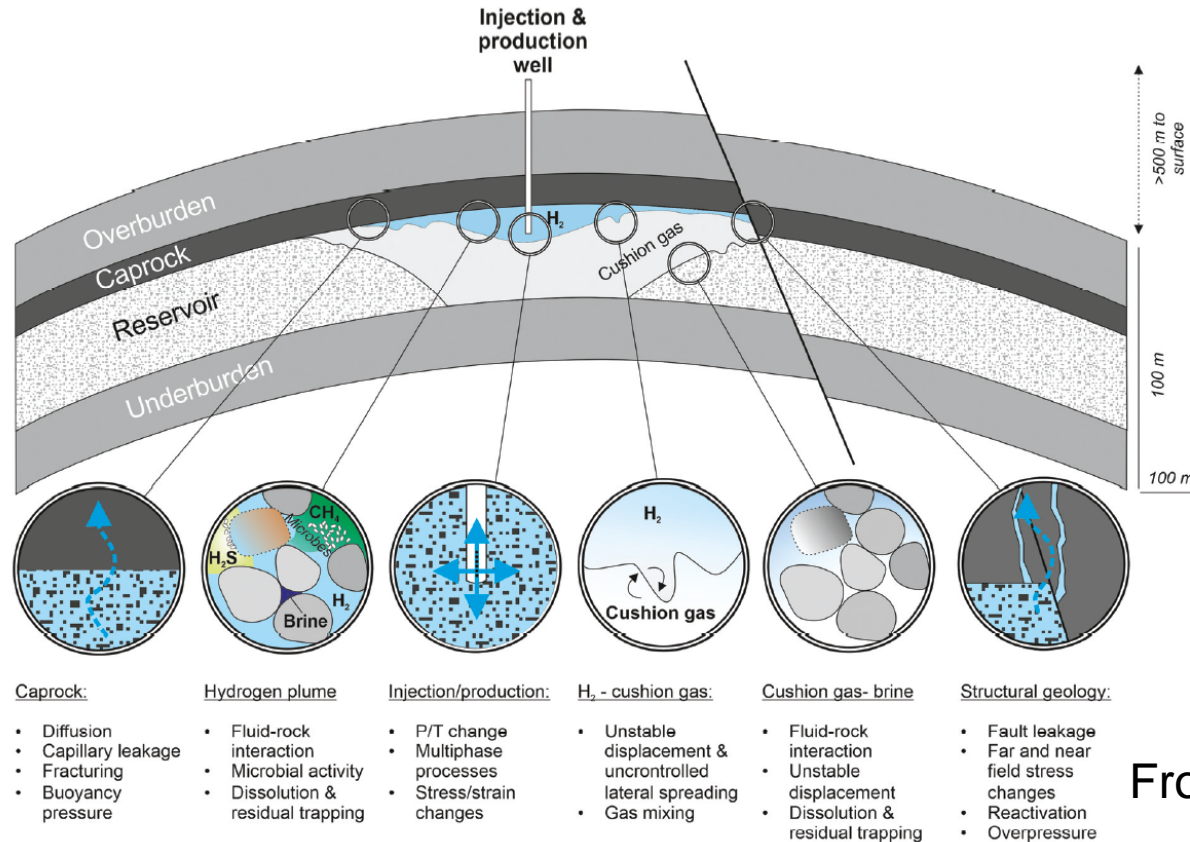
- Increasing resource recovery efficiency
  - reducing required Capital Expenditures for new fields
  - use of existing infrastructure
  - extension of field life time
- Reduced water cut – increased energy efficiency



From Morice et al. 2021

# Contributions of EOR TCP to Net Zero 2050 (2 of 3)

- **Underground Hydrogen Storage**  
same processes as in EOR

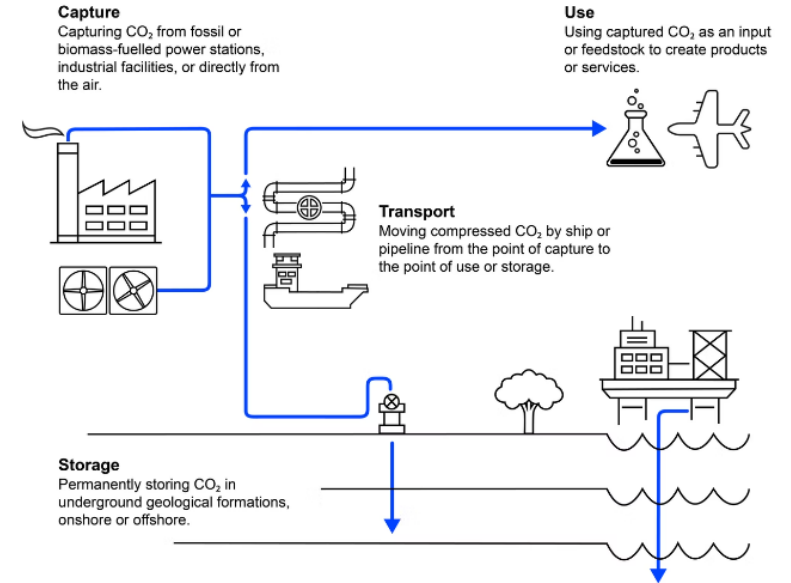
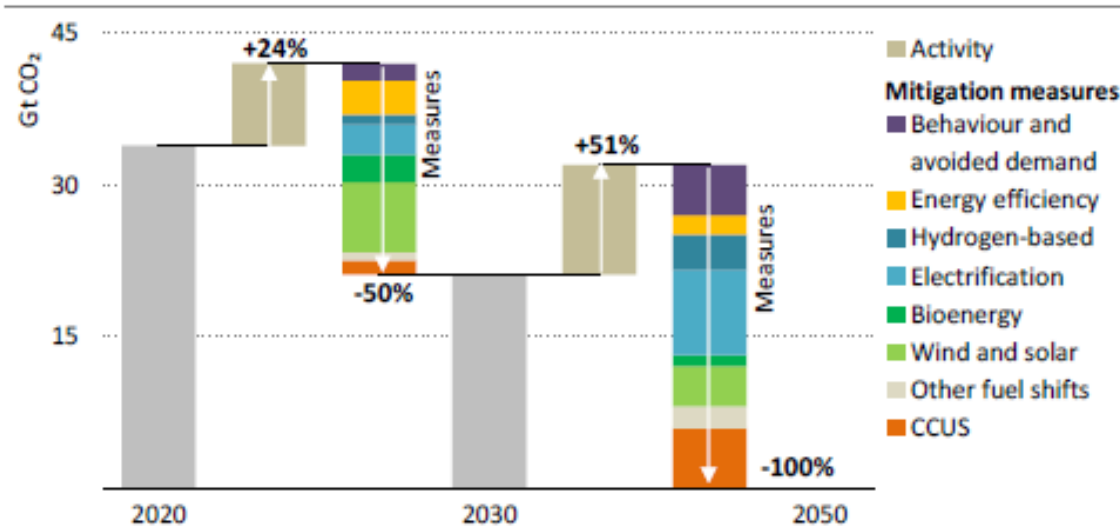


From Heinemann et al. 2021



# Contributions of EOR TCP to Net Zero 2050 (3 of 3)

- Carbon Capture Utilization and Storage (CCUS)  
physico-chemical processes and synergies, substantial contribution of CCUS to decarbonization




From IEA 2021, 2022



# Conclusions

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- EOR TCP is contributing to resource recovery extending field life and economics in Austria
  - EOR TCP was extended until 2025 owing to its contribution to various aspect of the IEA mission
  - Concerning Net Zero 2050, EOR TCP contributes in various ways
    - reducing carbon intensity of production
    - reducing Capital Expenditures
    - increasing field life avoiding additional developments
    - physico-chemical processes are the same as in Underground Hydrogen Storage and Carbon Capture Utilization and Storage (CCUS)
    - enabler for CCUS
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# An Artist View of the EOR TCP meeting 2019

