

# VELLO A. KUUSKRAA

PRESIDENT

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# ABOUT YOU, YOUR COMPANY, AND YOUR EXPERTISE

VELLO KUUSKRAA IS THE FOUNDER AND PRESIDENT OF ADVANCED RESOURCES INTERNATIONAL, A GEOLOGY, RESERVOIR ENGINEERING AND ECONOMICS TECHNICAL SERVICES FIRM.

ADVANCED RESOURCES, FOUNDED IN 1970, SPECIALIZES IN ASSISTING COMPANIES CONDUCT CARBON STORAGE, DESIGN ENHANCED OIL AND GAS RECOVERY, AND PURSUE UNCONVENTIONAL OIL AND GAS RESOURCES.

WE HELP IDENTIFY ECONOMICALLY VIABLE MARKETS FOR BENEFICIAL USE OF CO<sub>2</sub>, PARTICULARLY USING ENHANCED OIL RECOVERY.

# IMPORTANT WORK ALREADY UNDERWAY THAT WILL ENABLE THE SUITE OF ADVANCED MANUFACTURING APPROACHES FOR THE FUTURE OF CLEAN COAL AND CCUS TECHNOLOGIES

WITH SPONSORSHIP FROM U.S. DOE AND NETL, WE ARE COMPLETING WORK THAT WILL GREATLY EXPAND THE READINESS AND STORAGE CAPACITY FOR CO<sub>2</sub>:

- CARBONSAFE: REGIONAL GEOLOGIC CO<sub>2</sub> STORAGE SITE - KEMPER
- VIABILITY OF STORING CO<sub>2</sub> AND EXTRACTING OIL FROM RESIDUAL OIL ZONES
  - PERMIAN BASIN ROZ (3 REPORTS)
  - BEYOND PERMIAN BASIN ROZ
- FEASIBILITY OF STORING CO<sub>2</sub> IN OFFSHORE OIL FIELDS
  - COGNAC CASE STUDY
  - PETRONIUS CASE STUDY

# SEED IDEAS FOR DISCUSSION TODAY, HOW DOE CAN BETTER USE THE SUITE OF ADVANCED MANUFACTURING APPROACHES IN FUTURE CLEAN COAL AND CCUS EFFORTS

A SERIES OF CRITICAL NEEDS EXIST FOR MORE EFFICIENTLY AND SECURELY STORING CO<sub>2</sub> IN GEOLOGIC FORMATIONS AND WITH CO<sub>2</sub> EOR.

- DOWNHOLE SENSORS ABLE TO TRACK THE LOCATION OF THE UNDERGROUND CO<sub>2</sub> PLUME AND PRESSURE FRONT.
- FEEDBACK AND MONITORING DATA LINKED TO ANALYTIC SYSTEMS (MODELS) ABLE TO PROVIDE REAL-TIME CONTROL FOR UNDERGROUND CO<sub>2</sub> INJECTION AND STORAGE.
- ADVANCED WELLBORE AND FAULT-RELATED CO<sub>2</sub> LEAKAGE DIAGNOSTIC AND REMEDIATION SYSTEMS.

