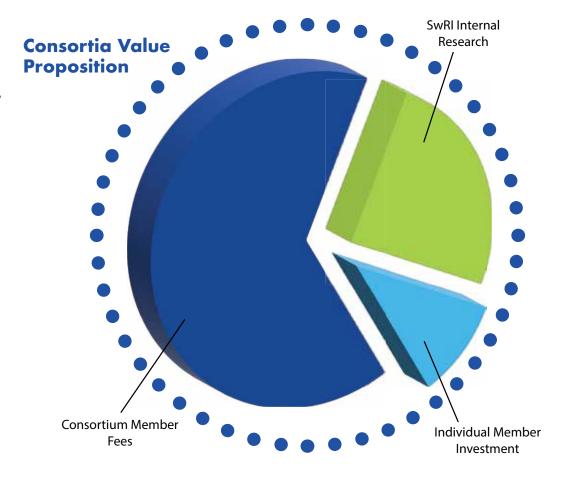
# TURBOCHARGING RED

For nearly 40 years, SwRI has developed and managed collaborative programs that enable clients to pool their research and development dollars for pre-competitive research through consortia and joint industry programs (JIPs). Members gain more benefit together than typically possible through individual research and can apply advances to their products and services. SwRI also supports consortia with internally funded research. Current consortium topics range from automotive to aerospace, oil and gas, robotics, batteries and energy storage system applications.



## NGL **NEXT GENERATION LIQUEFACTION**

- 2016-present • 2 phases
- 2 clients, 4 research entities, 3 independent consultants
- 2 journal articles published, 17 conference papers
- 9 oil & gas industry sponsors



#### **EAGLE FORD JIP**

- 2012–2017
- 2 phases
- 10 oil & gas sponsors
- 19 articles published

#### **PERMIAN BASIN CONSORTIUM**

- 2017-present
- 3 phases
- 9 oil & gas industry sponsors

### **SMART CALC**

SOUR MEASUREMENTS IN AUTOCLAVE FOR RELIABLE THERMODYNAMIC CALCULATIONS

- 2023
- Currently in phase 1 of 2
- 4 members



#### **NASGRO**

- 2001-present
- 8 3-year cycles
- 25 members
- ↑ 10 versions released

#### NUMERICAL PROPULSION SYSTEM SIMULATION

- 2013-present
- 12 members
- 3 software development areas
- 12 papers



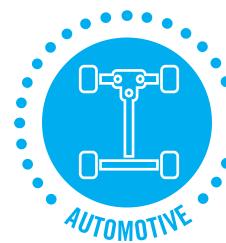
#### **BATTERY ENERGY STORAGE SYSTEM** FOR ELECTRIC GRID JIP

- 2021-2023
- 5 members
- 1 patent application
- 3 papers

### **EVESE**

#### **ELECTRIFIED VEHICLE AND ENERGY STORAGE EVALUATION**

- 2020-present
- 14 members total, 10 current
- 3 papers



BETTERN



- 2013-present
- 92 members
- 8 tools

#### AC2AT

#### ADVANCED COMBUSTION CATALYST & AFTERTREATMENT TECHNOLOGIES

- 2014-2022
- 2 phases
- 12 members in AC2AT, 5 members in AC2AT-II
- 2 articles published

#### HEDGE

#### HIGH-EFFICIENCY DILUTE GASOLINE ENGINE

- 2005-present
- 5 phases
- 24 members total.
- 45+ patents/pending
- 90+ papers

# **CHEDE**

## **CLEAN HYBRID ELECTRIC DIESEL ENGINE**

- 1991-present
- 9 phases
- 40 members total, 24 current
- 34 patents
- 65 papers

#### **AFEV**

#### **ADVANCED FLUIDS FOR ELECTRIFIED VEHICLES**

- 2020-present
- 26 members
- 5 research tasks

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