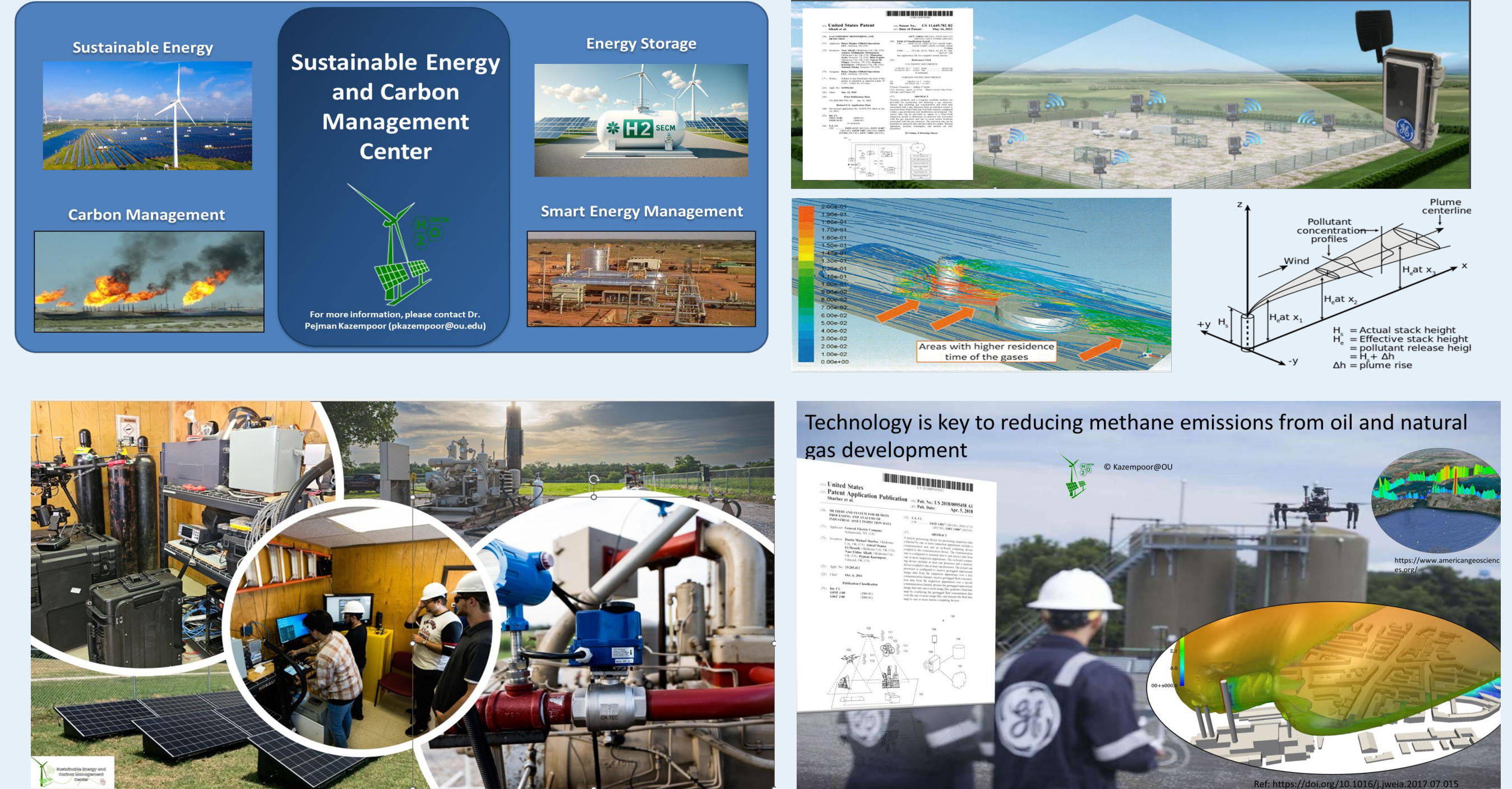
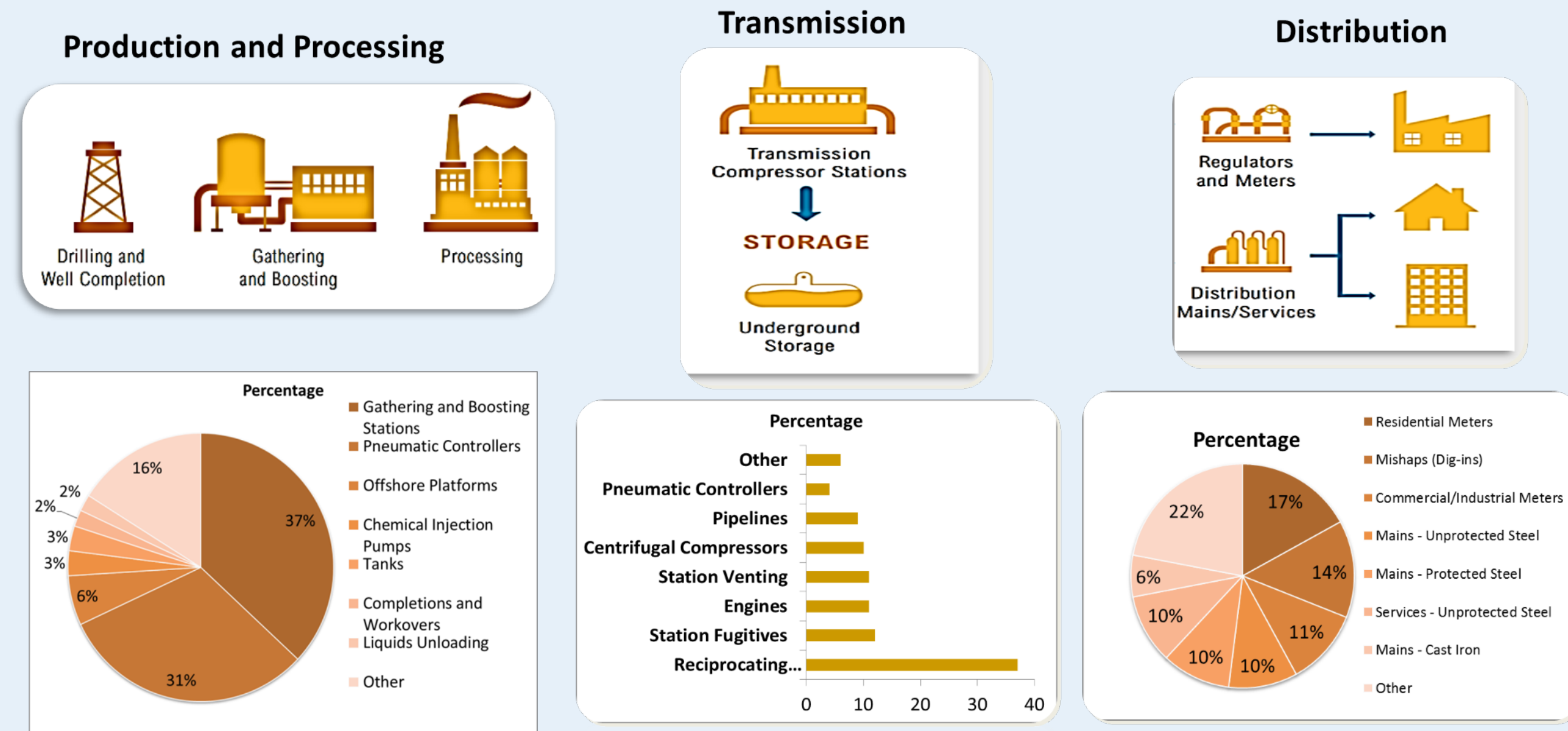


Intelligent, Universal, Low-Cost Emissions Reduction Retrofit Kit for Industrial Engines

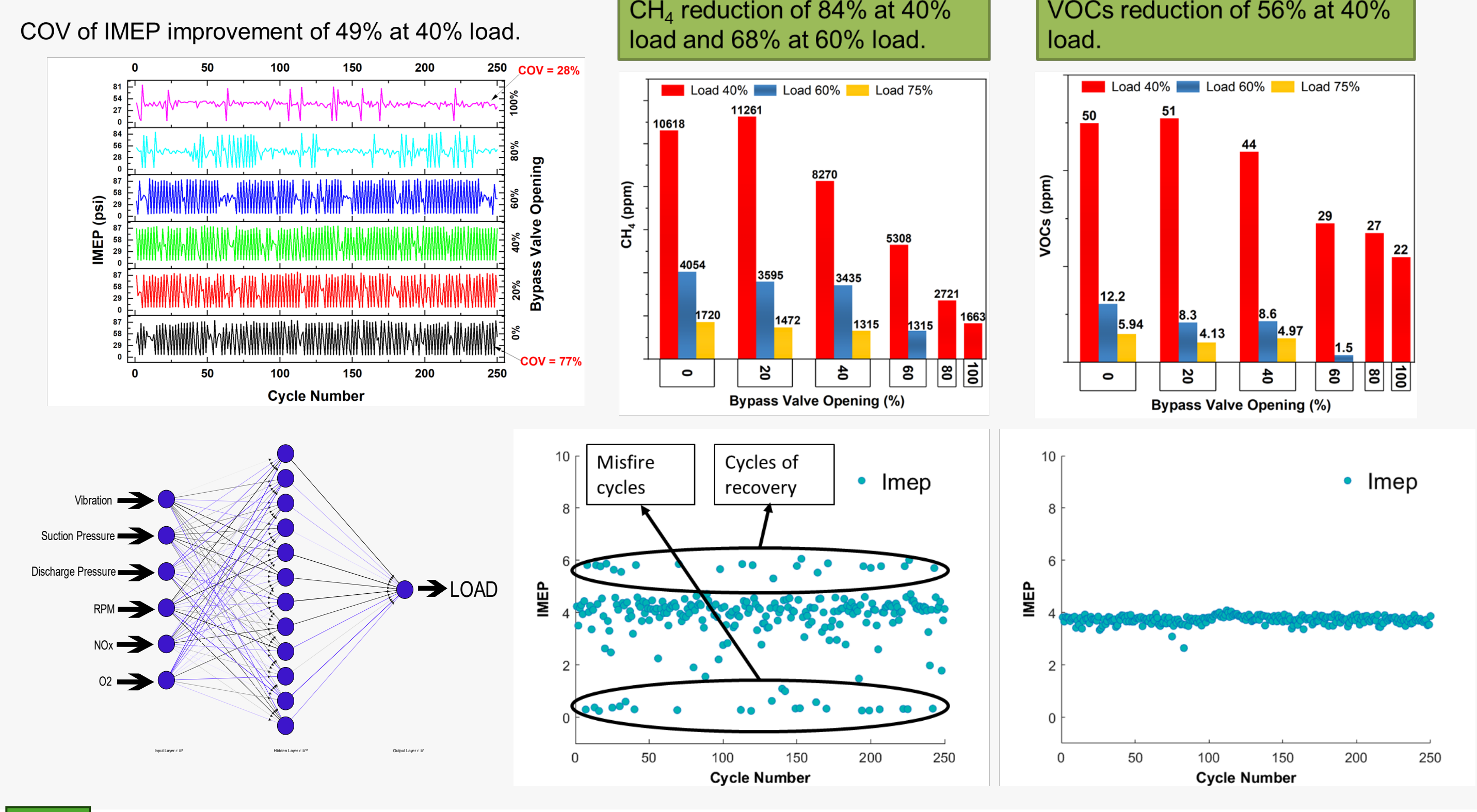
PI: Pejman Kazempoor (OU) (p.Kazempoor@ou.edu)
 Co-PIs: Ramkumar Parthasarathy (OU); Wilson Merchan-Merchan (OU); Sridhar Radhakrishnan (OU); Chuancheng Duan (K-State); Jeff Kimmel (Elipsa)

The oil and gas industry accounts for about a third of all methane emissions in the United States

As a dedicated center at OU, we are at the forefront of research aimed at reducing methane emissions

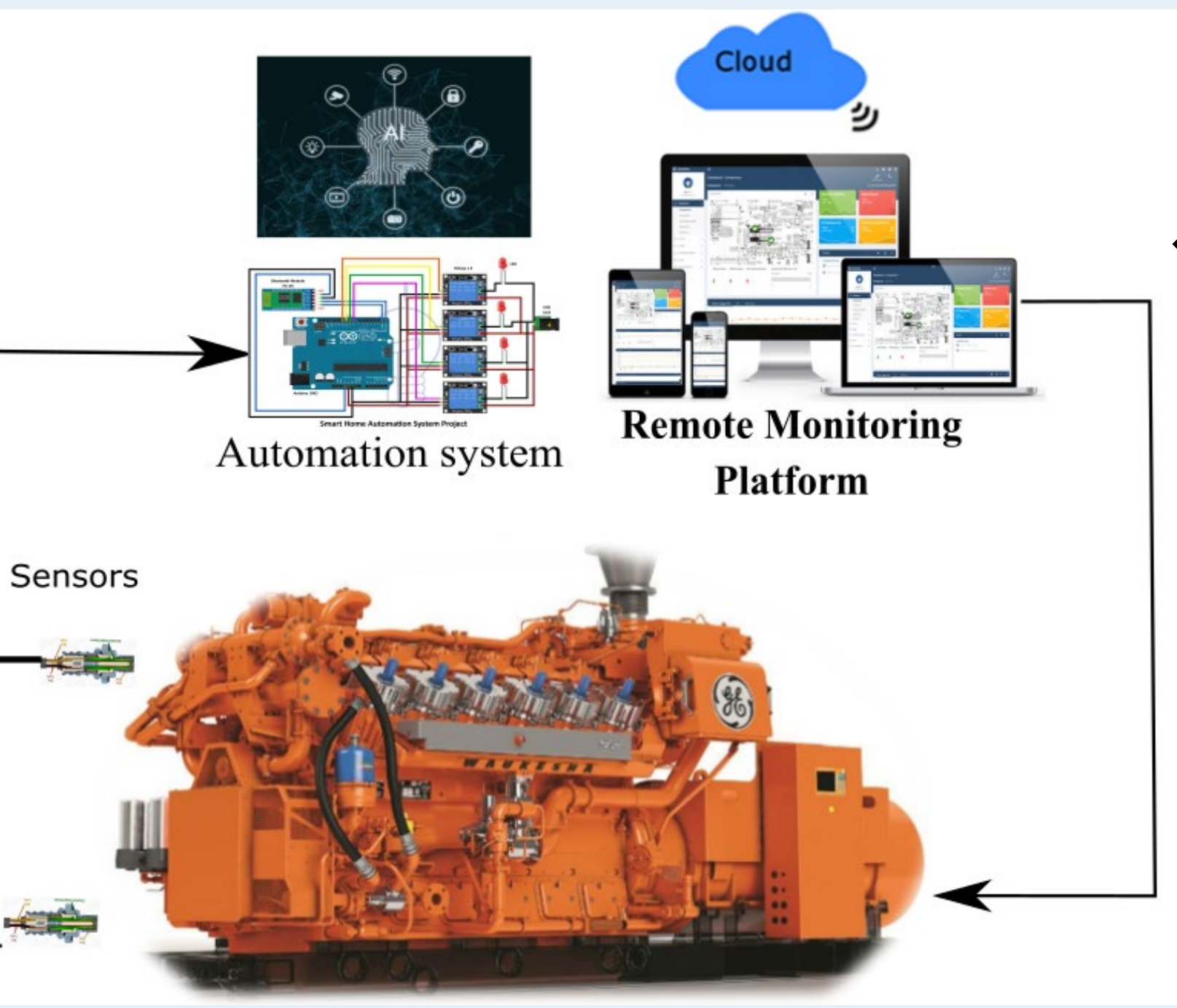


Successfully Developed a smart retrofit kit that can seamlessly integrate with industrial engines.

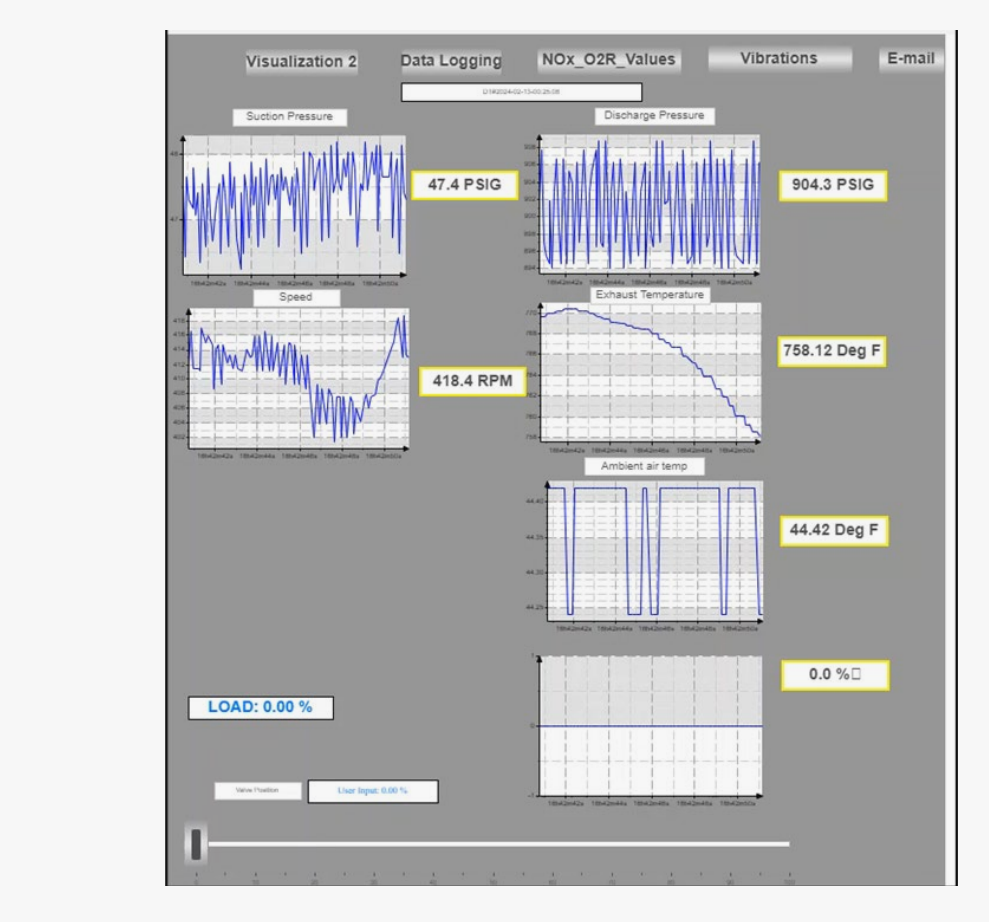
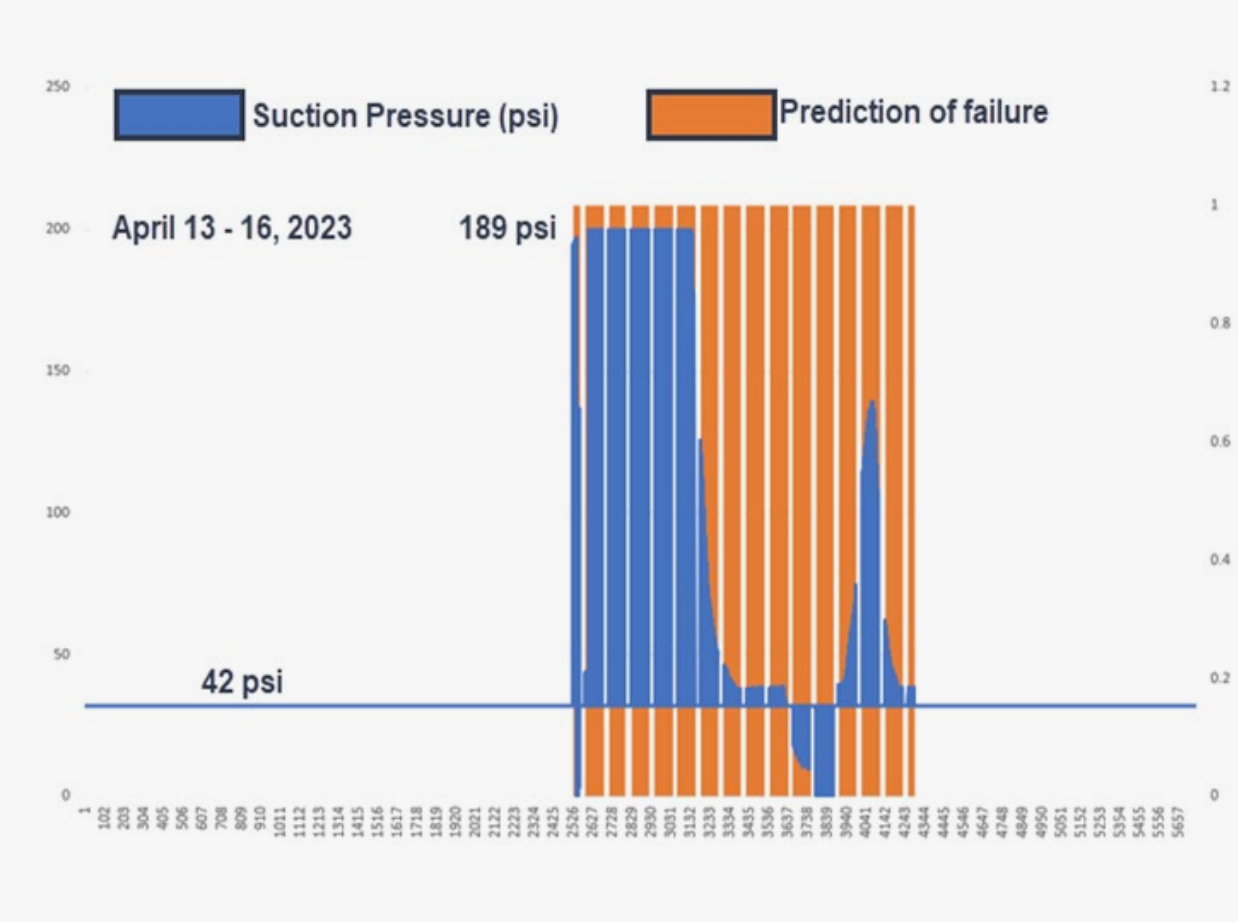
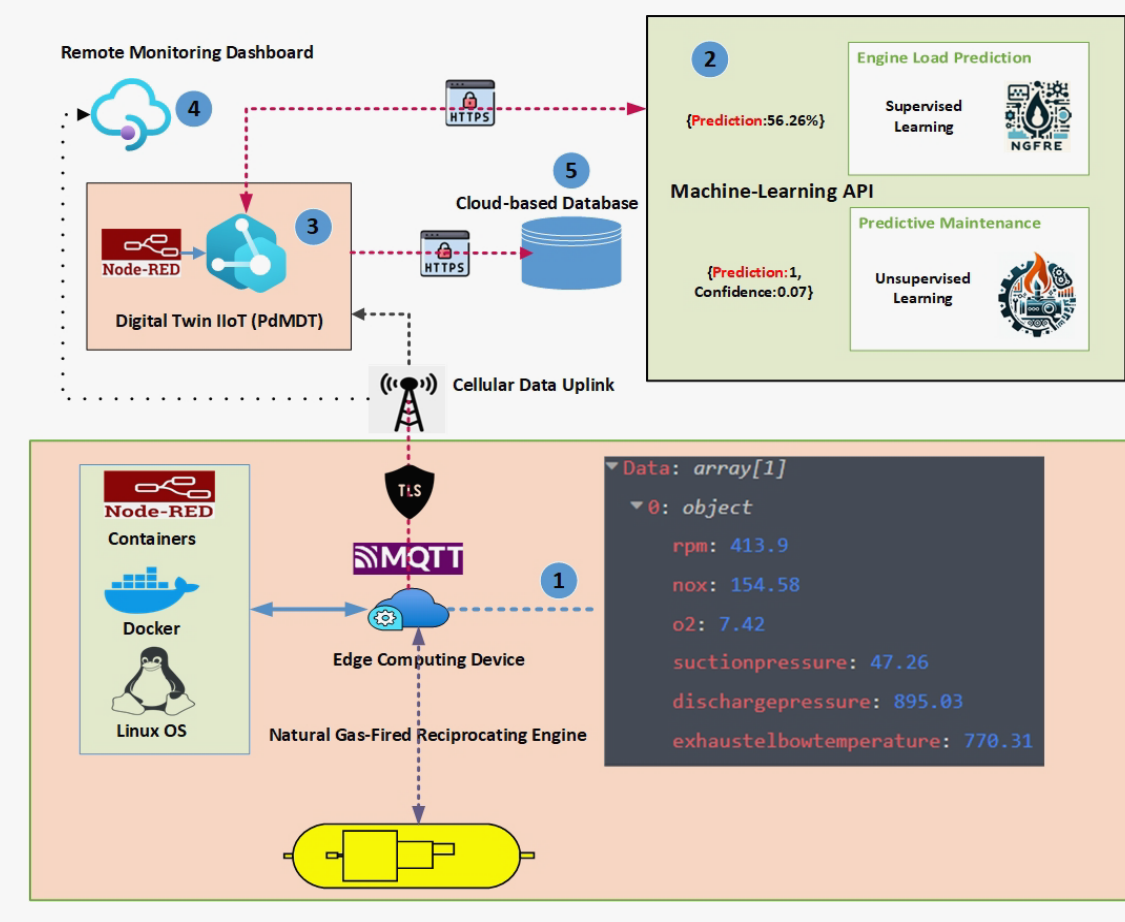
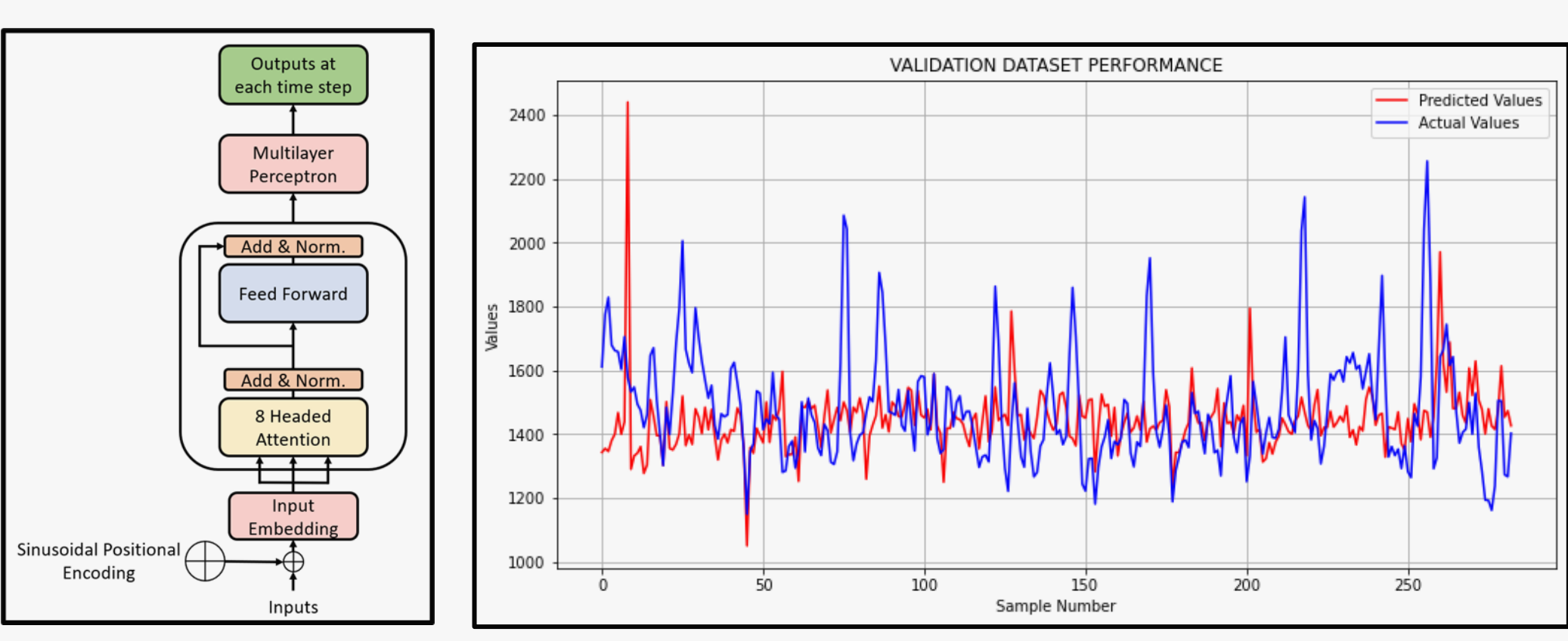
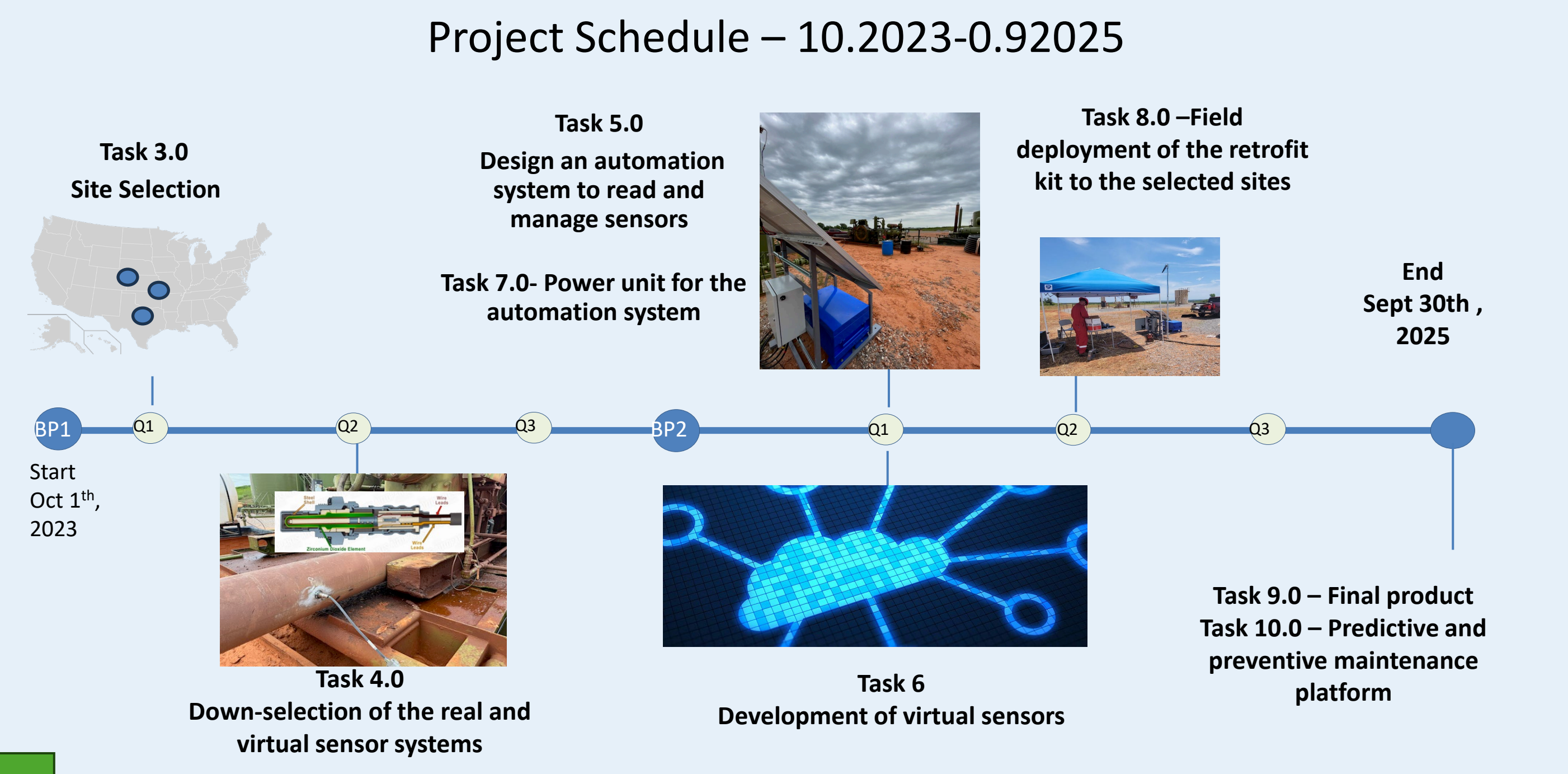


Project Objectives: Development and field deployments of an intelligent, universal, low-cost emissions reduction retrofit kit for industrial engines

This innovative smart retrofit kit significantly will cut methane emissions across various engine types, slashes operational costs, and improves fuel efficiency while boosting engine stability and performance.



- The proposed technology includes:
- ❖ Real-time performance sensing technologies,
 - ❖ Advanced machine learning algorithms,
 - ❖ Robust feedback control systems for engine performance management under different operating conditions.



Measure methane PPM in exhaust streams using low-cost, simple, Virtual sensors.

Digital Twin-based method, named PdMDT, for preemptive maintenance scheduling and failure prediction in NGFRE

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