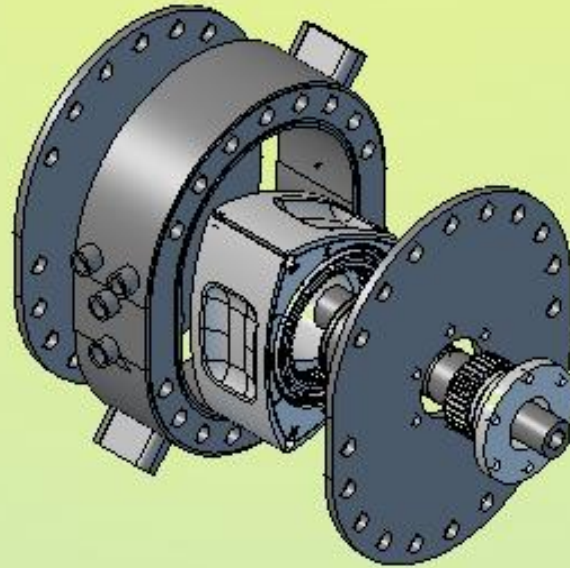
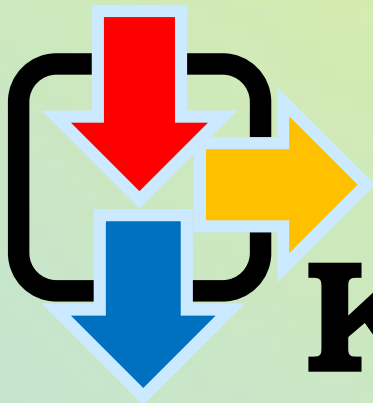


Introducing KansLab

KansLab is a clean engine developer. Different from others, we inject OECA (Oxygen Enriched Compressed Air) to enhance the combustion and reduce emissions.



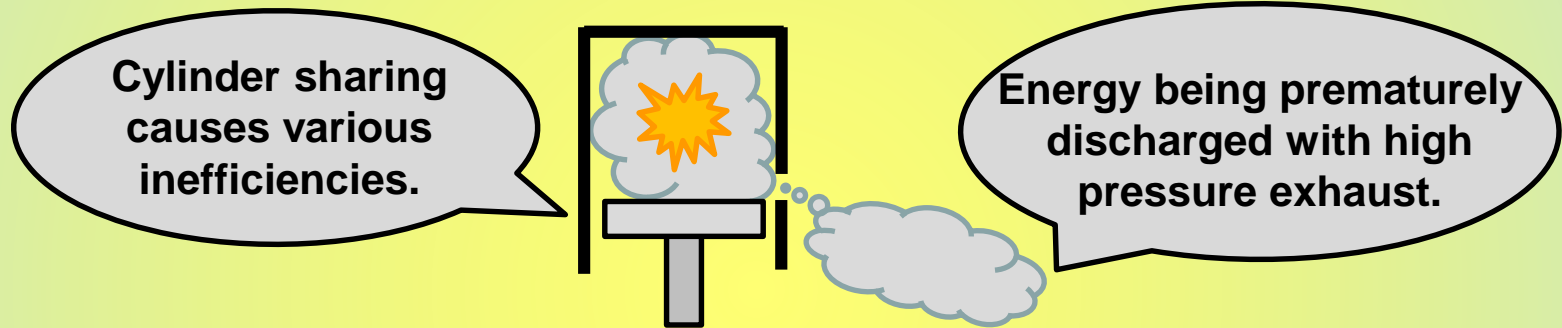
FAIR (Fuel-Air Injection Rotary) engine



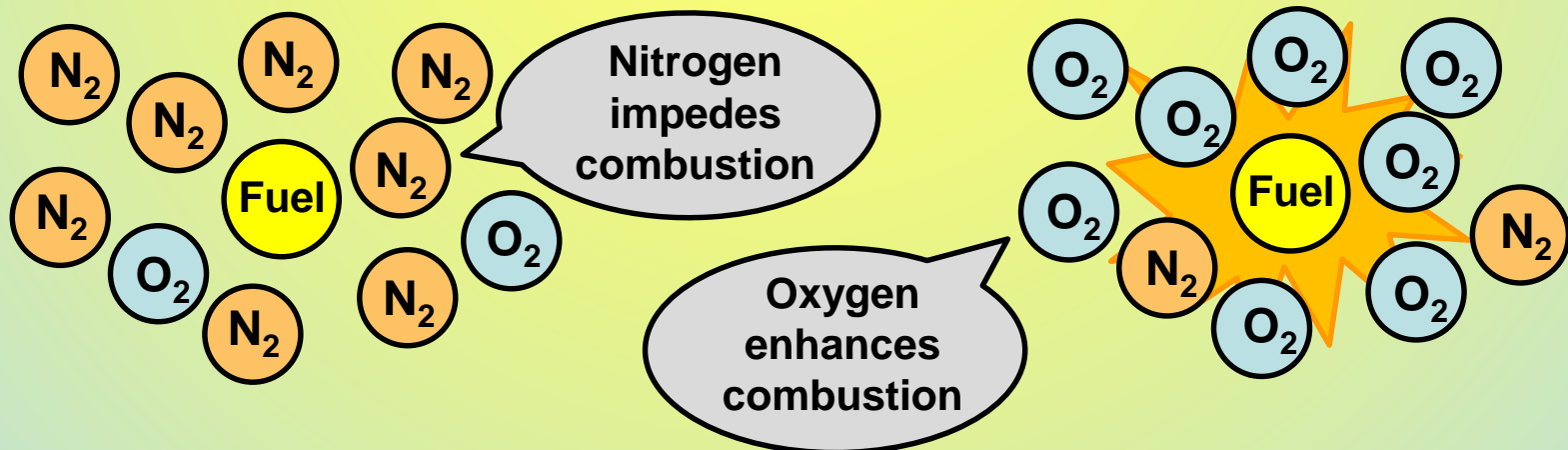
KansLab

How is it done today?

Problem 1: Four-stroke engine structure is based on cylinder sharing. Pressure after combustion is much higher than before within the same cylinder, which results to high pressure exhaust being discharged with useful kinetic energy wasted and noises generated.

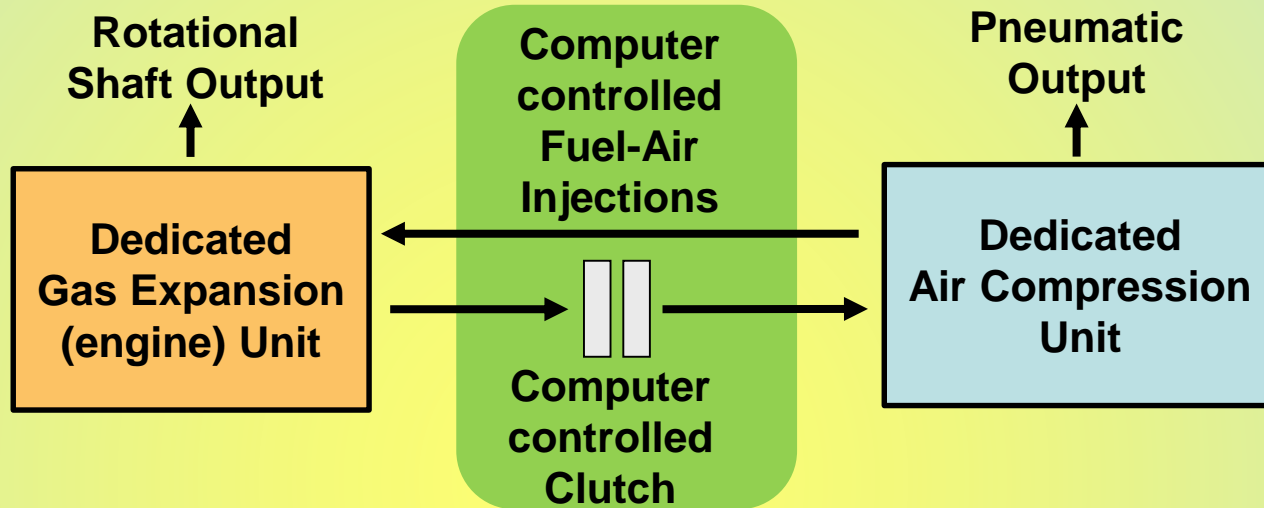


Problem 2: 79% of the intake air is nitrogen which impedes combustion and creates harmful NO_x emission.

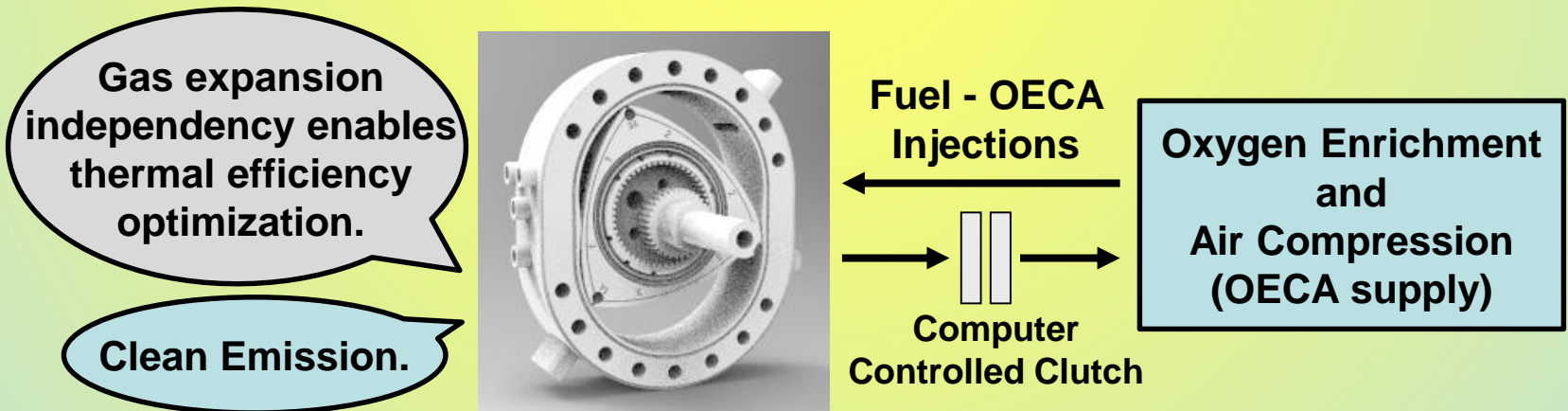


A new concept for engine optimization

Step 1: Dividing a conventional engine into two separate, dedicated units.

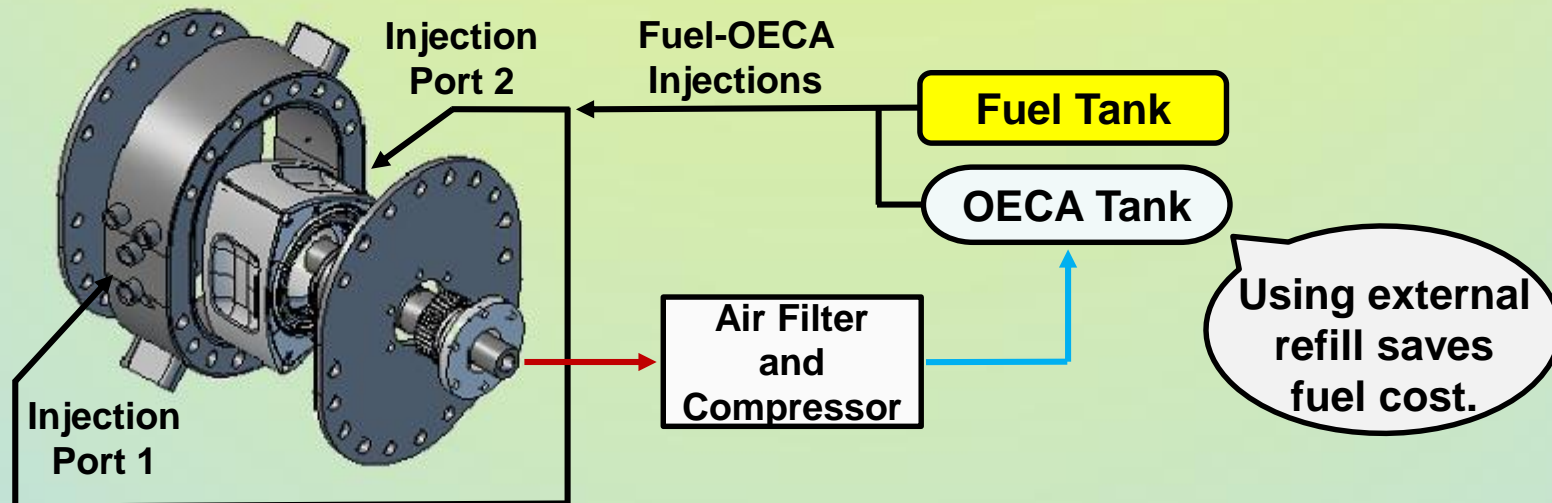


Step 2: Optimizing each gas expander (engine) and air compression unit.



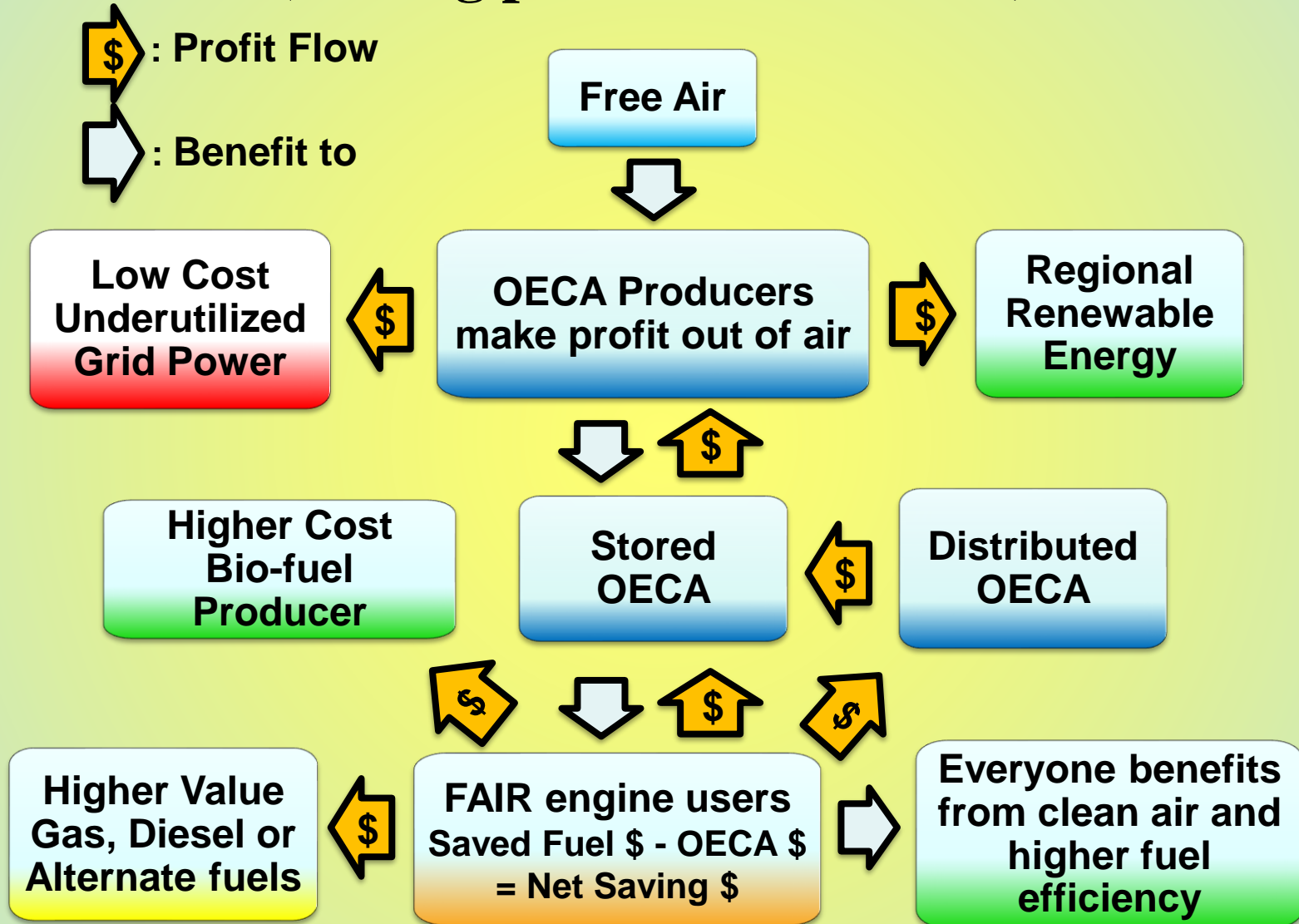
FAIR engine with OECA injection

- **FAIR engine is an implementation of Fuel-Air Injection concept to a conventional Wankel rotary engine. It replaces the air compression section of a Wankel rotary engine with a secondary injection and combustion mechanism. Therefore, a FAIR engine delivers two power strokes per shaft revolution versus a Wankel engine delivers one power stroke per shaft revolution.**
- **FAIR engine injects Oxygen Enriched Compressed Air (OECA) into the combustion chambers to accelerate the chemical reaction for thorough combustion and reduce NO_x , HC, CO and other emissions.**



Who cares FAIR engine and OECA economy ?

(Mining profit out of the air)



Oxygen based energy storage and distribution

Store Energy
with
Production

Conventional energy storage methods don't produce energy. OECA production creates oxygen concentration which increases the chemical potential and energy density of the product.

Energy Store
Efficiency

Assuming conventional energy storage and regeneration efficiencies were 90%. Total system efficiency would be 81%. Assuming OECA generating and storage efficiency also 90%. It can be consumed directly by FAIR engine without regeneration losses.

Grid
Independency

Conventional energy storage methods are grid dependent. OECA can be produced by renewable energy or underutilized grid power at anyplace with or without the grid.

Distributable

OECA can be distributed by tankers, just like fuels.

Target Audience (engine users)

Transportation	Heavy	<ul style="list-style-type: none">• Trains, trucks, buses.• Passenger vehicles.
	Light	<ul style="list-style-type: none">• Personal mobility, moped, motorcycles.• Field robot, exoskeleton, water craft, sports equipment, wheelchair.
Stationary	Heavy	<ul style="list-style-type: none">• Farming machines, pumps.• Construction machines.• Power plants, generators.
Aviation	Heavy	<ul style="list-style-type: none">• Passenger planes, cargo planes.• Helicopters, VTOL.
	Light	<ul style="list-style-type: none">• Gliders, ultralights.• Drones, UAV.• Personal VTOL.
Power Tools	Light	<ul style="list-style-type: none">• Garden tools, portable generators.• Firefighter, earthquake or avalanche rescue equipment.
Navigation	Heavy	<ul style="list-style-type: none">• Cargo ships, surface boats.• AIP underwater vessel propulsion.
	Light	<ul style="list-style-type: none">• Speed boats, small vessels.• Personal underwater propulsion.

Value proposition

(A future engine to meet SULEV standard)

Conventional IC engines have difficulties to meet today's energy efficiency and environmental challenges.

Battery powered EVs are not and may never catch up expected energy density to replace conventional powertrains.

Phasing out



Complete Solution



Market Need:
Clean replacement for
Diesel and Otto engines



**Not an ideal
Solution**



**No Conclusive
Advantage**

FAIR engine with OECA injection resolves the root cause of combustion inefficiency for IC engines. OECA as a clean, low cost oxidizer, it may lead to a quantum leap in fuel efficiency and clean emission.

Clean engines developed based on four-stroke principle can not resolve the root cause of combustion inefficiency because of rich nitrogen in the intake air.