

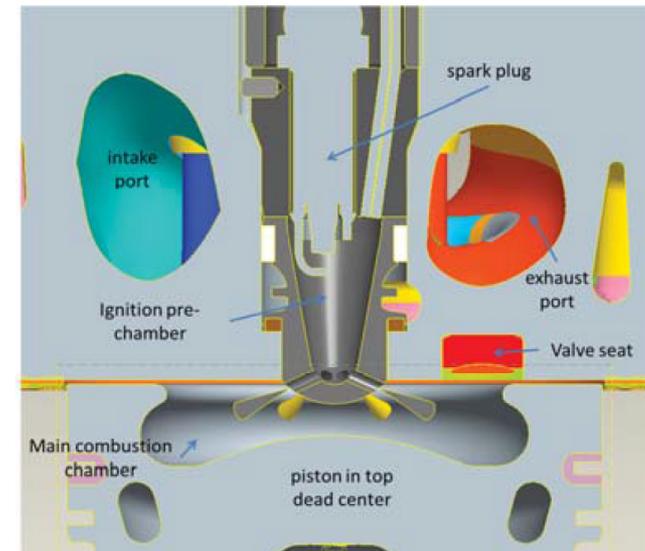
# EU H2020 GasOn Project: Development of Gas-Only Internal Combustion Processes

## ■ Development of CNG-only, high efficiency engines:

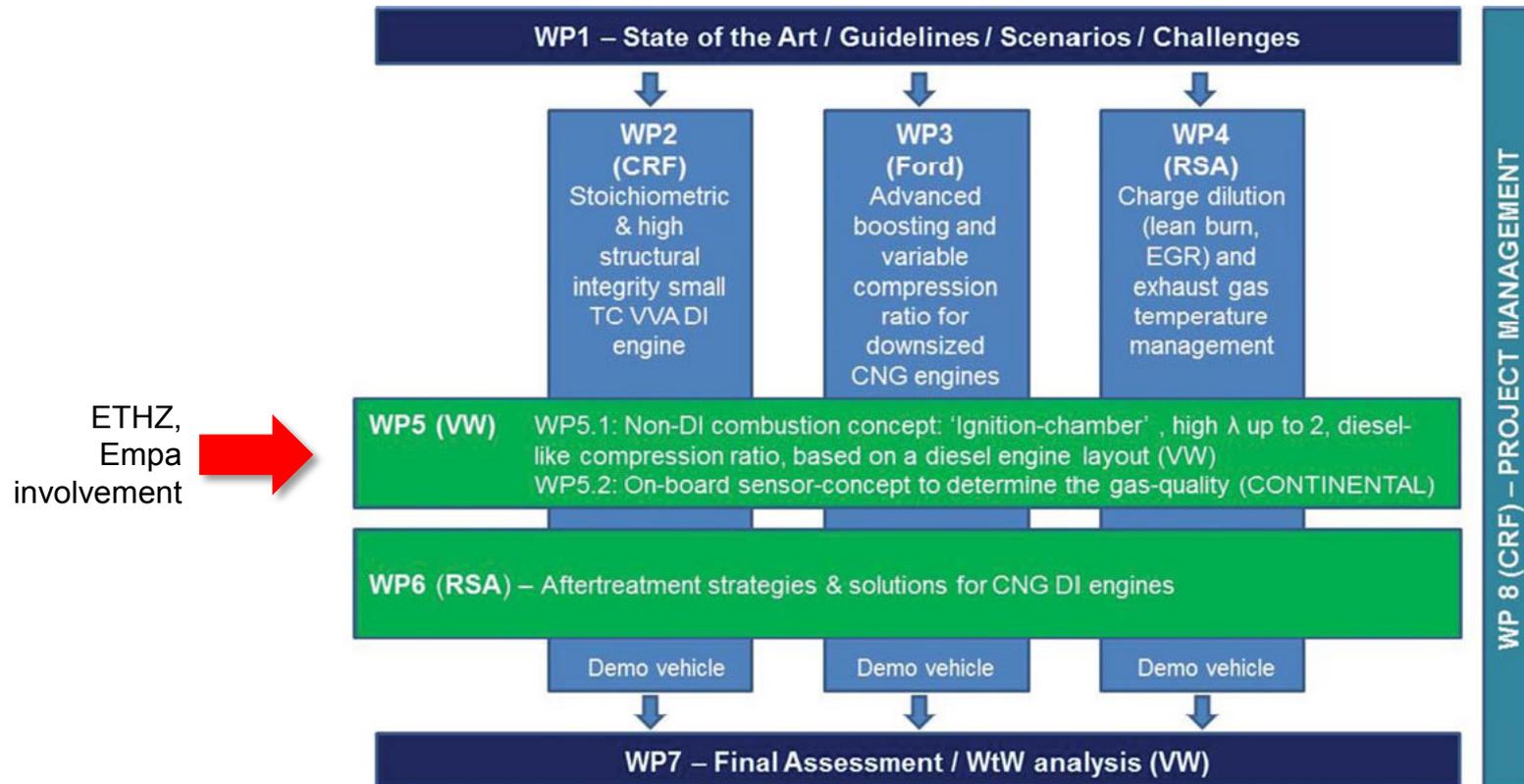
- Improvement in efficiency and range compared to existing systems
- Use of low-Carbon fuels – Reduction of CO<sub>2</sub> emissions
- Compliance with Post-Euro 6 NO<sub>x</sub> emissions regulations

## ■ WP5 (VW, EMPA, ETH-LAV, ETH-IDSC, PUT, Ricardo, Continental):

- Development of non-DI lean burn combustion concept, up to prototype level
- Focus at ETH/Empa on ignition and combustion fundamentals as well as on engine prototyping.



# EU H2020 GasOn Project: Overall project structure



## Relevance to the Energy Transition: Why CNG?

- Use of low-carbon fuels: Methane combustion produces 25% less CO<sub>2</sub> emissions than combustion of gasoline or diesel
- Allow the use of renewable fuels (bio-methane, synthetic natural gas from power-to-gas processes, CH<sub>4</sub>/hydrogen mixtures, etc.) without change in the technology/infrastructure
- WP5 Goals:
  - State of the art for passenger cars: methane is combusted in gasoline-like engines and gasoline-like efficiencies are achieved. Contribution GasOn: achieve diesel-like efficiencies - **20% fuel consumption reduction** compared with today's technology, **600 km driving range**
  - Improvement of fundamental understanding of ignition and combustion in gas engines for future developments
  - Transfer of knowledge and understanding to industrial partners

## Contribution to the strategic goals of the SCCER

- Reduction of fossil-sourced CO<sub>2</sub> emissions in Mobility through efficient use of low-carbon and renewable fuels
- Close collaboration between EMPA, ETH-LAV and ETH-IDSC for knowledge transfer and successful application
- Cooperation with industrial partners (VW/Ricardo/Continental) for the application of developments in design and production of powertrains and vehicles
- Cooperation with SCCER-BIOSWEET and HaE for renewable fuels

Investigation of pre-chamber ignition for optimal combustion in monovalent gas engine with diluted charge

