Five fields of CPCE applications

to resolve the global climate crisis

EVISA Engineering's CPCE process targets the Stationary Sources of the CO_2 emission to the atmosphere that is culprit for the 75% of CO_2 emission globally. These six sources with the technology for super-efficient hydrogen based fossil power generation with zero-net-carbon emission are presented in the following five block diagrams.

The six Stationary Sources of CO_2 emission for the CPCE net-zero-carbon emission are:

1. All fossil power plants, i.e. the coal, crude oil, natural gas, bio-mass power plants
2. Crude oil refinery plants as well as some other chemical plants like ammonia, methanol, ethanol plants
3. Iron and steel production
4. Aluminum production
5. Pulp and paper production
6. Cement production

The following block diagrams present the essential of CPCE operation for removal of carbon dioxide (and other pollutants), liquefaction of carbon dioxide and re-use of carbon dioxide via high pressure low temperature electrochemical conversion of captured carbon dioxide and water to high-end products like power, jet fuel, gasoline, methanol, ethanol, DME and other valuable hydrocarbons.

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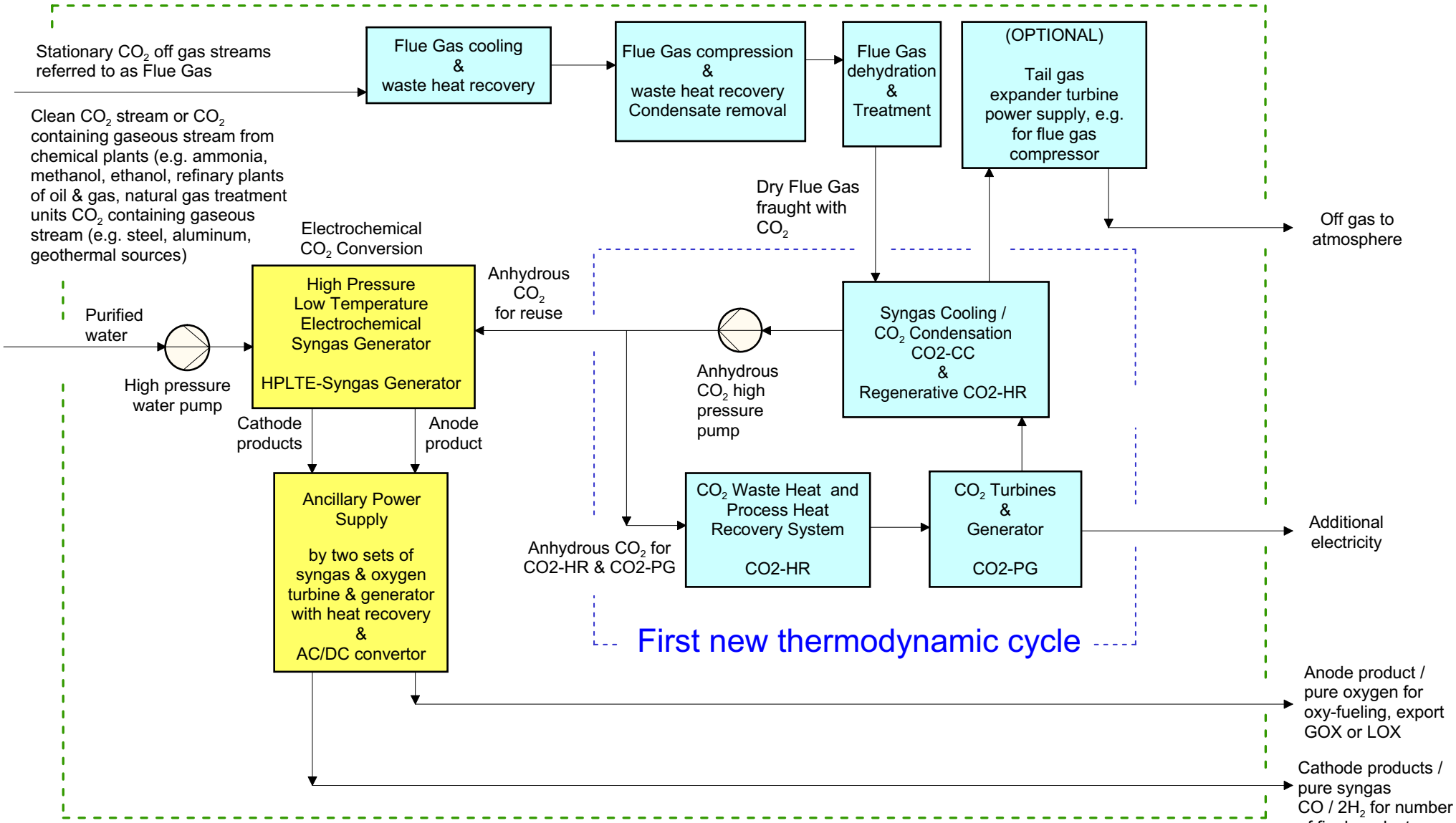
Process Technology Process Development

CPCE for other than fossil power plants, generically referred to as Flue Gas

Boundary scope of CPCE



The applications for anode product, the pure oxygen, comprise the oxygen supply to gasification, oxy-fueling and chemical applications.

Great number of applications of cathode products, the pure syngas ($CO/2H_2$) e.g. for gasoline, SNG (substituted natural gas), methanol, ethanol, ammonia, fertilizers, plastics, consumer products, etc.

Sections of Phase-1

Sections part of Phase-2

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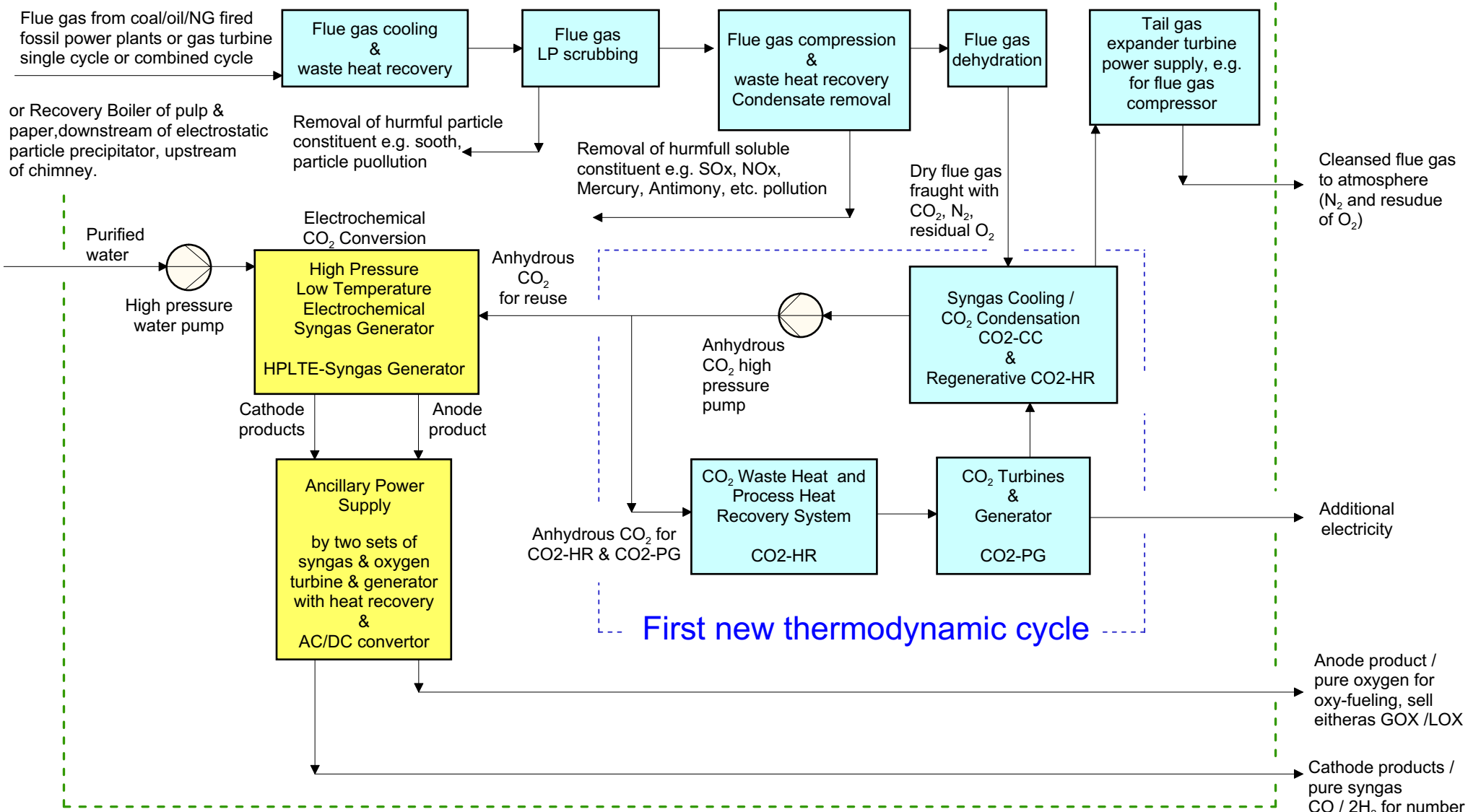
Process Technology Process Development

Post-combustion carbon capture application of CPCE for Flue Gas of power plants

Boundary scope of CPCE



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Sections of Phase-1

Sections part of Phase-2

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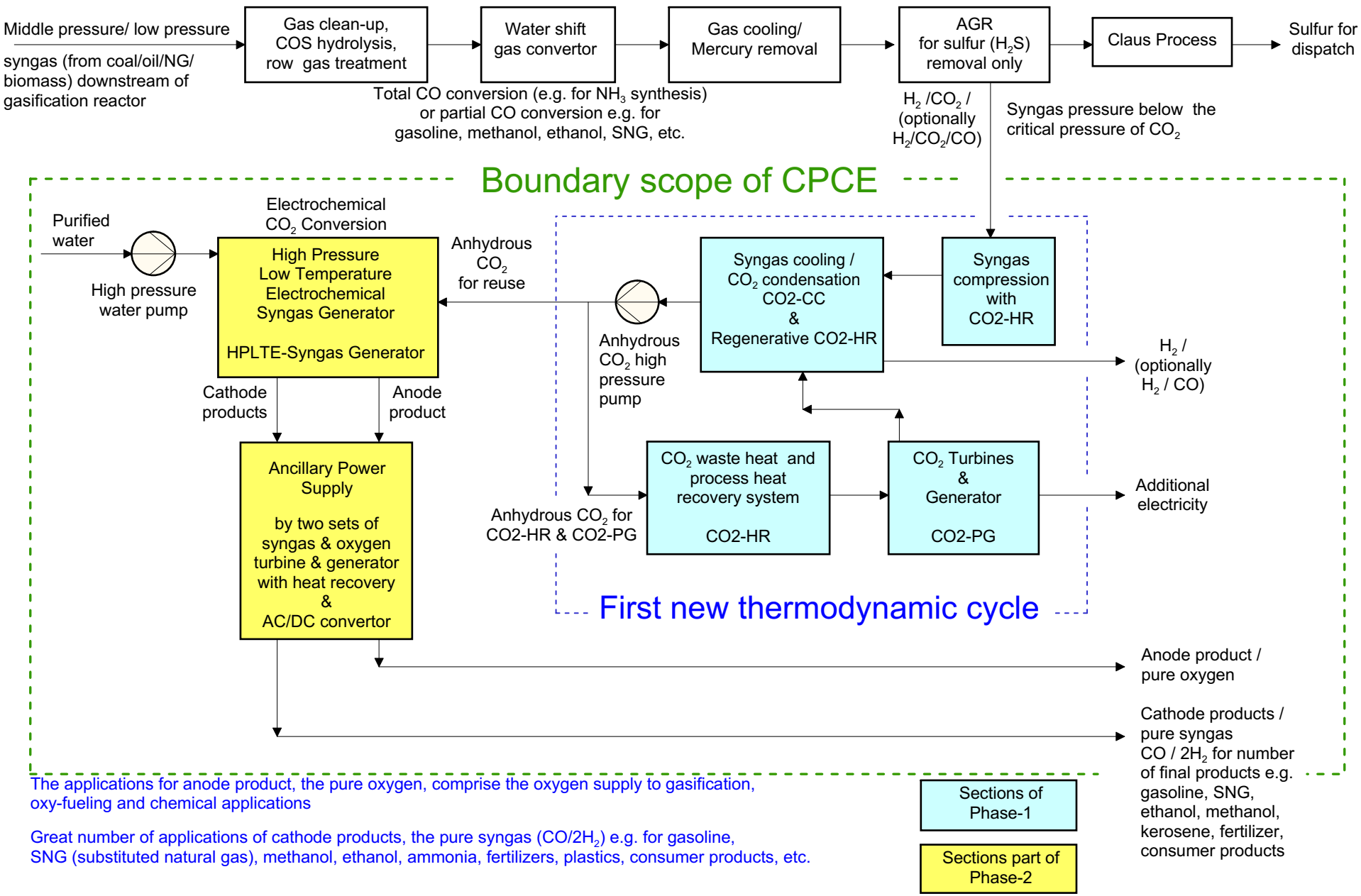
Pre-combustion carbon capture application of CPCE for MP/LP gasification



The applications for anode product, the pure oxygen, comprise the oxygen supply to gasification, oxy-fueling and chemical applications

Great number of applications of cathode products, the pure syngas (CO/$2H_2$) e.g. for gasoline, SNG (substituted natural gas), methanol, ethanol, ammonia, fertilizers, plastics, consumer products, etc.

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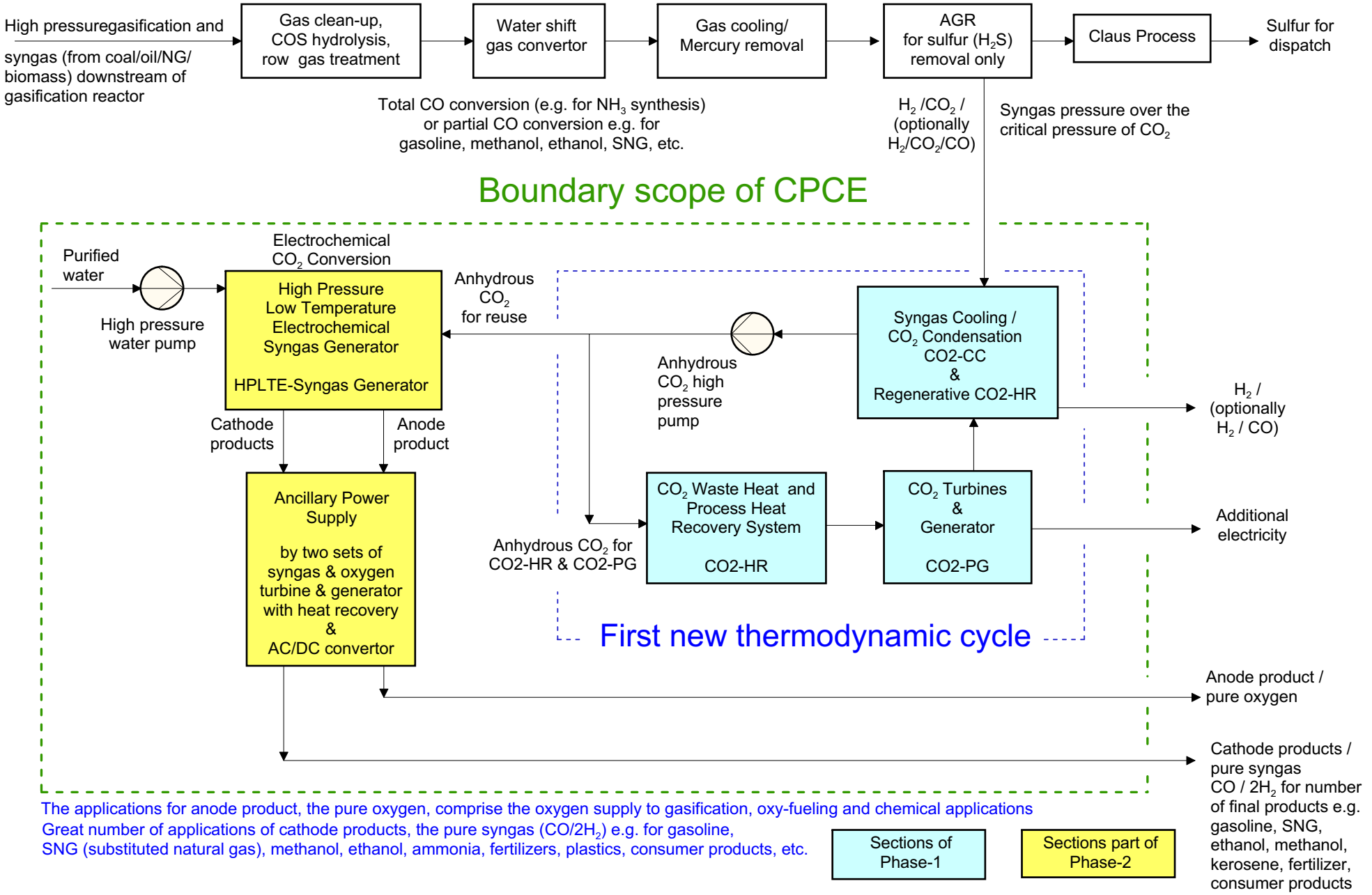
Pre-combustion carbon capture application of CPCE for HP gasification



The applications for anode product, the pure oxygen, comprise the oxygen supply to gasification, oxy-fueling and chemical applications

Great number of applications of cathode products, the pure syngas (CO/$2H_2$) e.g. for gasoline, SNG (substituted natural gas), methanol, ethanol, ammonia, fertilizers, plastics, consumer products, etc.

Sections of Phase-1

Sections part of Phase-2

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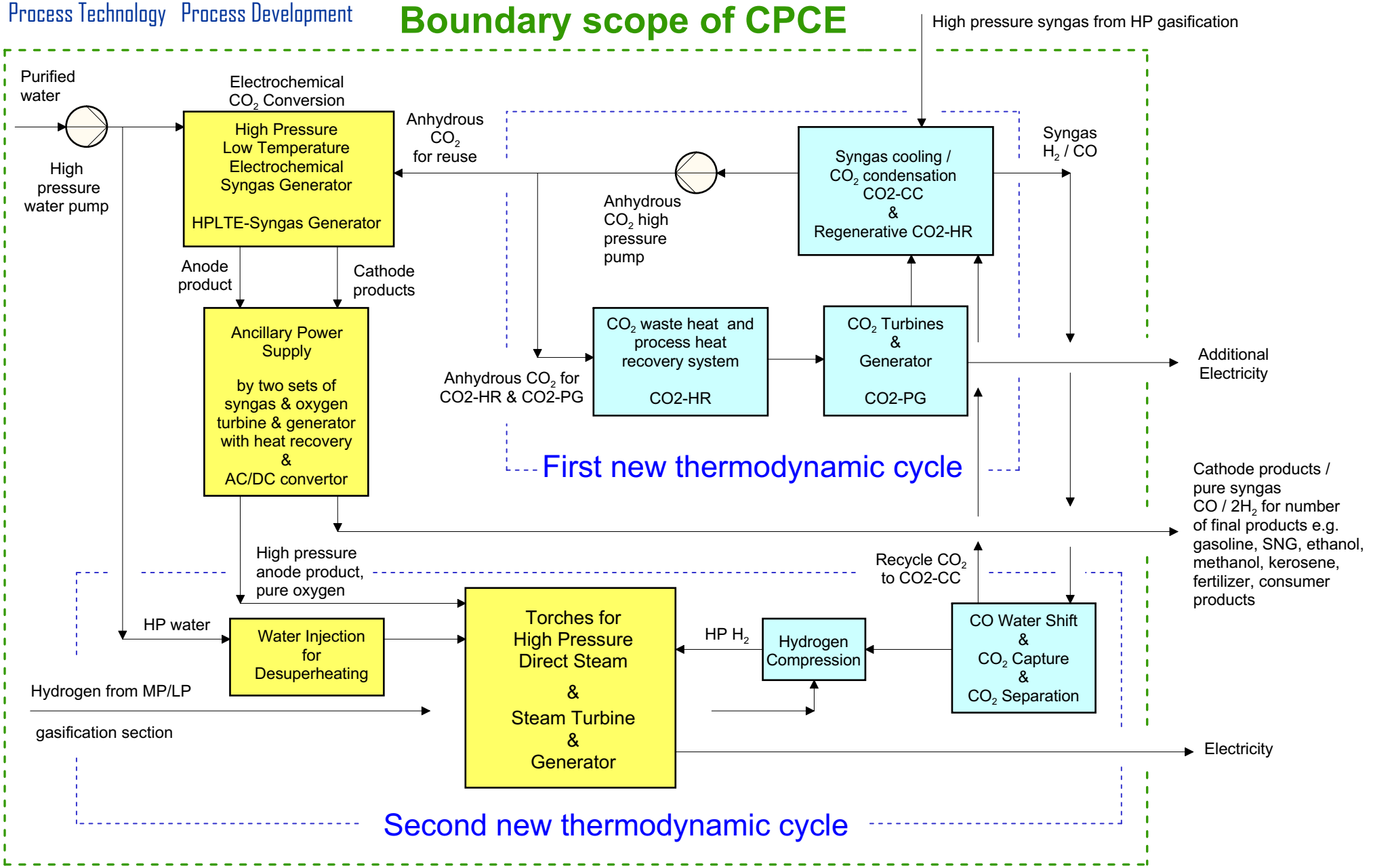
Process Technology Process Development

Super-efficient hydrogen based fossil power plants with HP gasification

Boundary scope of CPCE



The pure oxygen from anode, comprises the oxygen supply to gasification and sequential combustion with hydrogen only.

Sections of Phase-1

Sections part of Phase-2

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