CO2 CAPSOL

A cost effective, energy efficient, carbon capture solution

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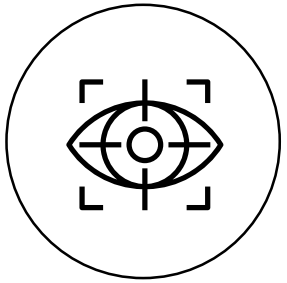
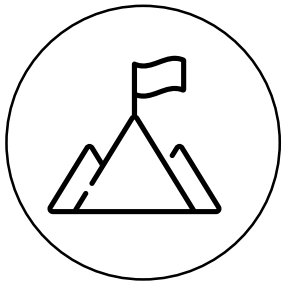
Our Why



OUR VISION

To accelerate the world’s transition to a carbon negative future.



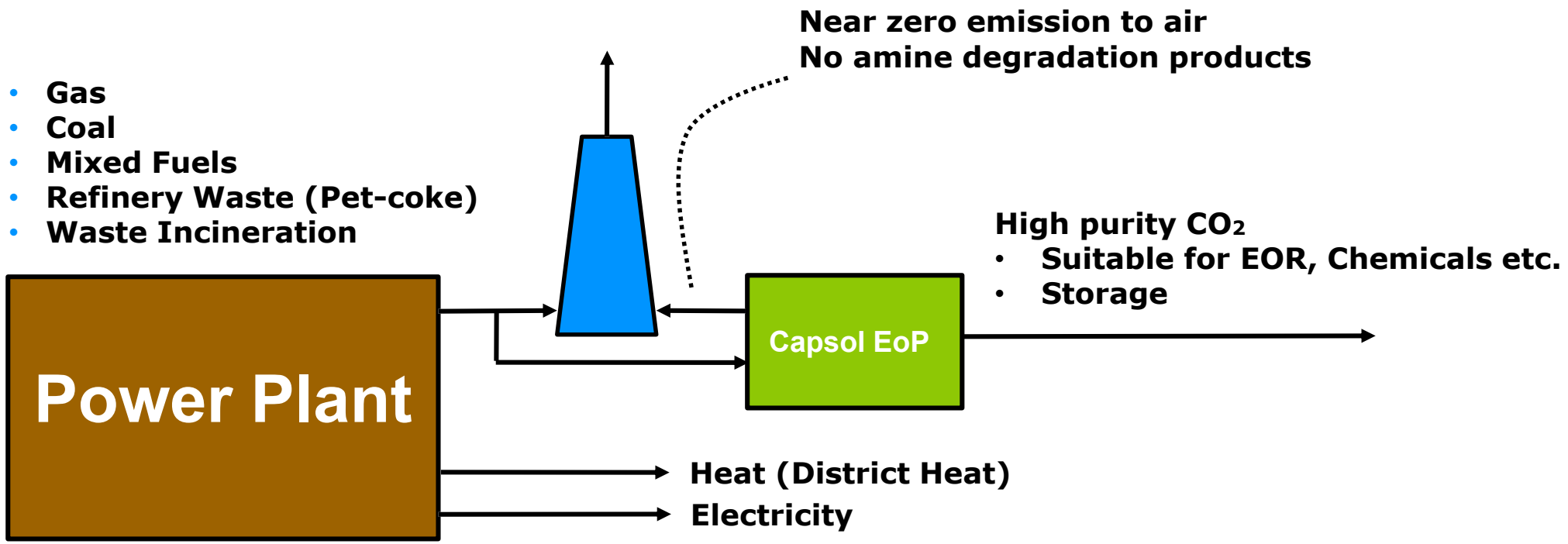
OUR MISSION

Our mission is to be a major contributor to solving one of our biggest global challenges; climate change, with our patented Capsol EoP (End of Pipe) - a cost effective, energy efficient, compact, scalable and flexible retrofit capture carbon solution for power plants and industrial facilities.

We aim to be a global leader in capturing CO_2 from power plants and industrial facilities

The Capsol End of Pipe (EoP) Solution

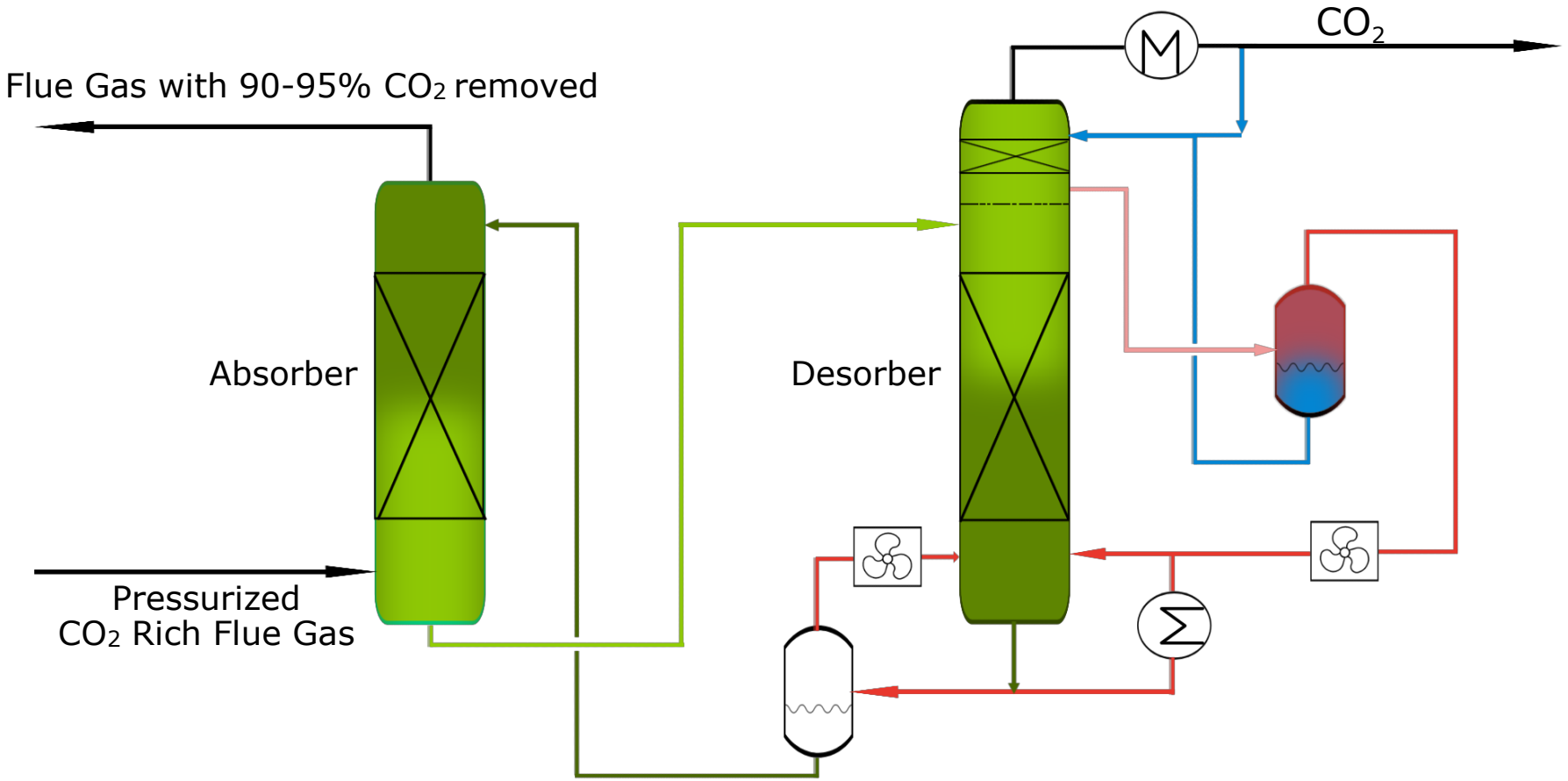
Process overview



CO2 Capsol offers a well-proven carbon capture solution based on Hot Potassium Carbonate (HPC) with several competitive advantages compared to Amine based solutions

Capsol EoP Patented Energy Recirculation

A unique and very simple set-up designed to keep the energy in the system



- The HPC technology is widely used in hundreds of plants; ***however with significant energy loss***
- CO2 Capsol has patented rights for energy recirculation; ***that significantly improves the HPC process***

Main difference between a traditional set-up without energy saving and Capsol End of Pipe (EoP) is the use of steam recycling in the desorber

Advantages of Capsol EoP

Field-Proven Technology

Using HPC (Hot Potassium Carbonate) as an absorbent of flue gas is **thoroughly documented and used in thousands of existing plants**.

The Capsol EoP solution has been **developed and refined during a 15 year period**. Capsol EoP can capture CO_2 from any power plant, industrial facility or plant powered with biofuel.

Inexpensive Absorbent

Hot Potassium Carbonate (HPC) is **significantly more cost effective than Amines**.

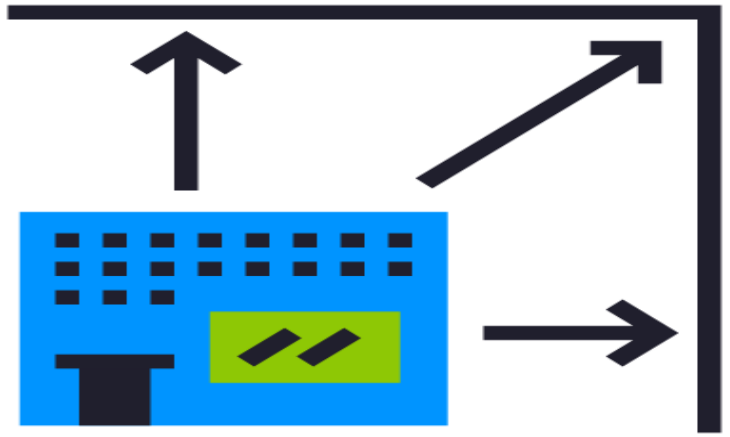
Potassium carbonate is a common remedy in the food industry and readily available.

Advantages of Capsol EoP

Flexible and Scalable

A single unit can process flue gas from plants with emissions of up to **2.5 million tons/year** with flue gas CO_2 concentrations of 20%.

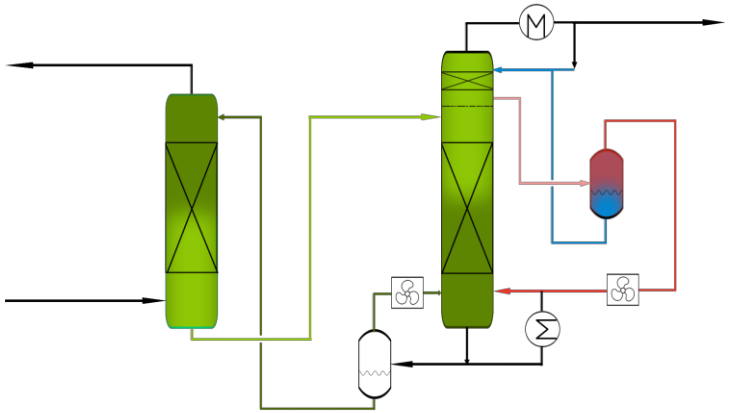
Two or more units will operate **in parallel** for facilities with emissions of more than 2.5 million tons/year.



Cost-Efficient

The industry's **most cost-efficient solution** due to **low energy consumption** (200 kWh/ton CO_2 captured (0.7 GJ/ton)) in the capture process, thanks to our **patented energy recuperation**.

For comparison, Amine-based technology requires approximately 2.5 GJ/ton CO_2 captured, mostly in the form of heat.



Advantages of Capsol EoP

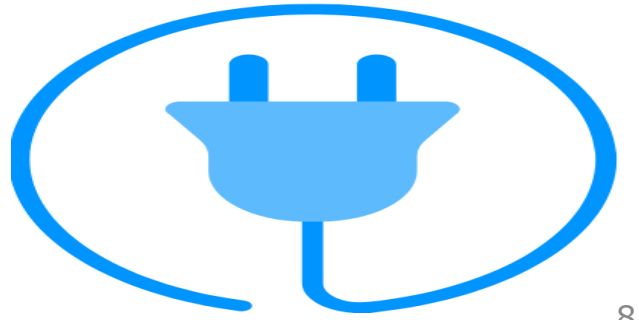
Stand Alone Unit

Easy to install stand-alone unit. **Does not interfere with existing facility**. Compact design. Minimal space requirements. **No downtime during installation period**. Installation and commissioning time of only 24-30 months for large plants.

No Harmful Chemicals

In contrast to alternative solutions, no risk related to emission of harmful chemicals, which is a big advantage of using HPC as absorbent.

Electricity or Steam



The Capsol EoP solution can be **powered by electricity or steam**.

Benefits of being able **to run on electricity only** is
1) The capturing facility is independent of the mother plant.
2) No need to invest in steam production to run the capture unit.

Case study – Waste-to-Energy (WtE) Plant

Results from engineering study by CO2 Capsol in 2020

Study performed on Waste-to-Energy (WtE) plant in Europe.

CO_2 emissions: 300.000-500.000 ton CO_2/year

The **Capsol EoP solution**, using electricity only, gave the following results:

- OPEX: 19 EUR/ton CO_2 captured
- CAPEX: 7–8 EUR/ton CO_2 captured
- **Capture costs: 26-27 EUR/ton CO_2 captured**
- CO_2 Capture rate: 95%

Studies published by Sintef indicate capture costs of **39–55 EUR**/metric ton CO_2-captured (depending on the cost of external energy) for steel, pulp and paper, and cement, using **Amine based technology**.

Most Cost-Effective Carbon Capture Solution

Amine based solutions 50% more expensive

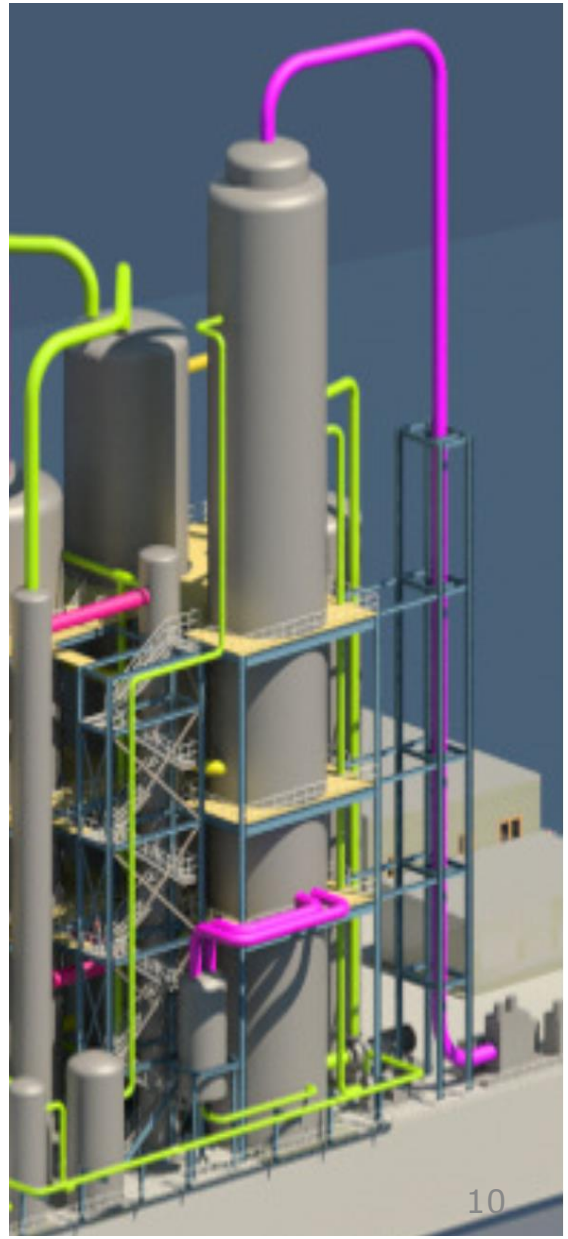
A new report issued by the Swedish Energy Agency on June 18, 2020, shows that carbon capture cost (Capex and Opex) for kraft pulp mills in Sweden are 50% more than our patented Capsol EoP solution (see next slide).

Capsol EoP Capture costs: 25-30 €/ton CO_2-captured

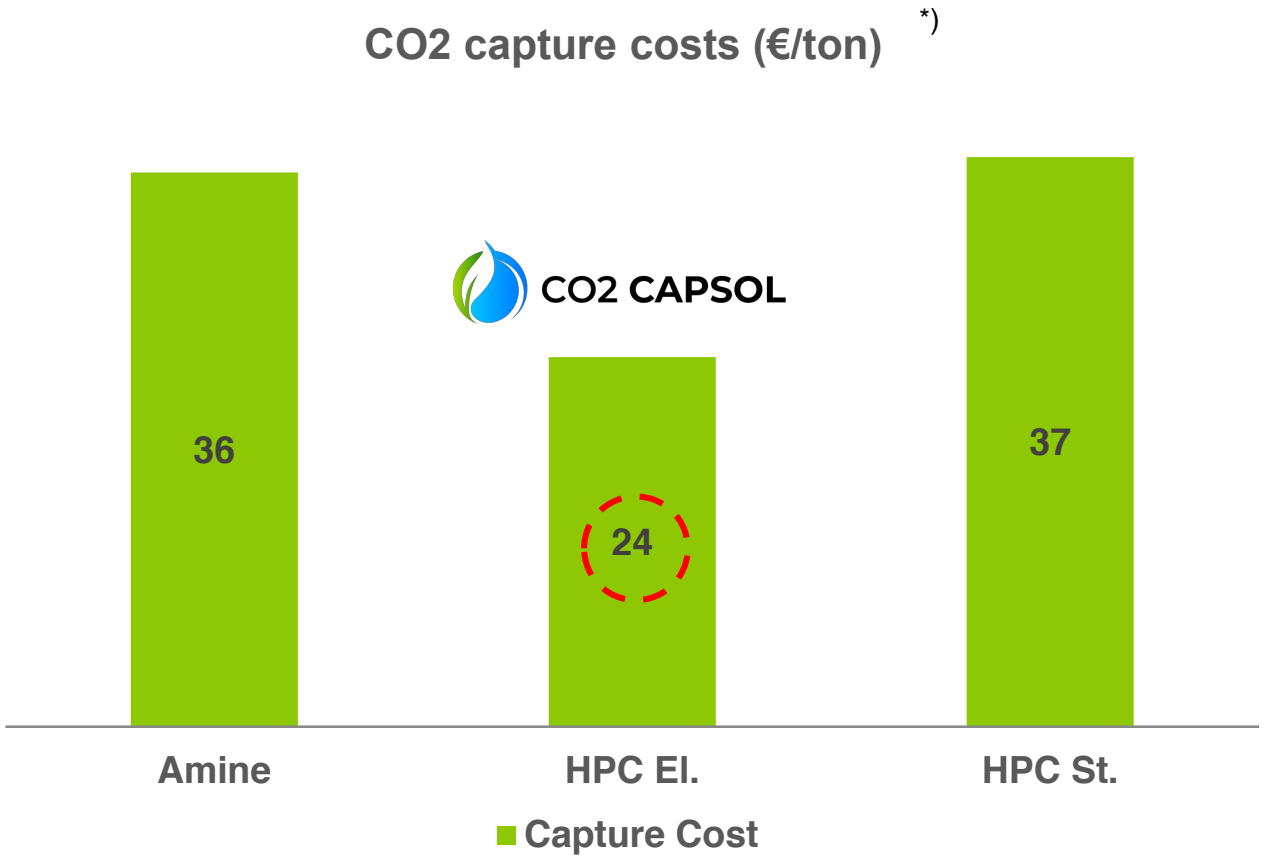
A similar study by Sintef indicate carbon capture costs of 39–55 €/ton (depending on the cost of external energy) for steel mills, pulp and paper mills, and cement plants, using amine based technology. In comparison, capture costs for Capsol EoP is 25-30 €/ton CO_2-captured, depending on application.

Factors affecting the CO_2 capture costs

Factors affecting the CO_2 capture costs is mainly regional variations in cost of energy and the CO_2-concentration in the flue gas. Flue gas CO_2-concentration varies depending on type of industry/facility.



Capsol EoP Provides Unparalleled Cost Efficiency



01

Capex lower than competitors

Our estimated Capex will be lower than competitors primarily due to reduced cost for modification/integration of mother plant.

02

Lower/no chemical cleaning costs

We use non-toxic chemicals (absorbent) which reduce capture cleaning costs.

03

Free to choose EPC contractor

We are independent. No exclusive agreement with any EPC contractor. Plant owner can choose EPC contractor with lowest price during tendering process.

Note: *) «Conceptual study for Bio-CCS within Stora Ensos Swedish kraft pulp mills»

HPC vs Amine Based Solvent

HPC (Hot Potassium Carbonate)

- ✓ More than 675 installations using HPC globally
- ✓ Low level of complexity, cost efficient and non-toxic process
- ✓ No hazard to environment or people
- ✓ Less expensive than Amines or Amino acids
- ✓ The captured CO_2 is totally free of degraded (potentially carcinogenic) amines, it has a very low oxygen content and it is suitable for technical use
- ✓ Studies show 50% higher carbon capture costs using Amines compared to our Capsol EoP (HPC) solution
- ✓ Potassium carbonate is readily available and a common remedy used in the food industry

Amines

- High energy consumption
- Chemical reactions can form new compounds such as nitrosamines and nitramines, which can negatively affect health and the environment
- The nitrosamines needs to be collected and treated which is a costly procedure
- Can react with oxygen or NOx in the flue gases forming corrosive degradation products and nitrosamines which are harmful
- Can be degraded to some extent in the presence of O_2, SO_2, NO_2 and HCl. Makeup is needed to be added which increases OPEX

So why does not everybody use HPC?

Using HPC as absorbent requires pressurized gas for the chemical reaction between CO_2 and HPC to take place. The flue gas in ordinary plants is not pressurized. The flue gas must therefore be pressurized. **This requires large amounts of energy i.e. very expensive**. Our **Capsol EoP solution recycles most of the energy** used for pressurizing the flue gas, thus **making it energy efficient and very cost effective.**

Brief History and Growth Expectations

2003

Conceptual idea and preparation of first patent by Sargas

2008

A successful test in Stockholm at the Värtan power plant

2014

CO2 Capsol was established; taking over patents and technical staff from Sargas

2019

Breakthrough as selected best technology for Stockholm biomass power plant

1H 2020

Growing organization on marketing and business development

2021

Sign minimum one contract in 2021. Then 2+ contracts per year

CO2 CAPSOL

Some of the projects we are involved in:

01 Sweden: Biomass-fired CHP Plant (Combined Heat and Power), Waste to Energy(WtE) plants and kraft pulp mills.

02 Norway: Waste to Energy and industrial plants

03 Europe: Power and Waste to Energy Plants

04 US: Industrial Plants

05 Far East: Partnering with large Engineering Procurement and Construction(EPC) company.

Solid Patent Portfolio

Patent rights in all key regions and within several patent families, each with equal priority and based on the same invention

Thermal power plant with CO2 sequestration

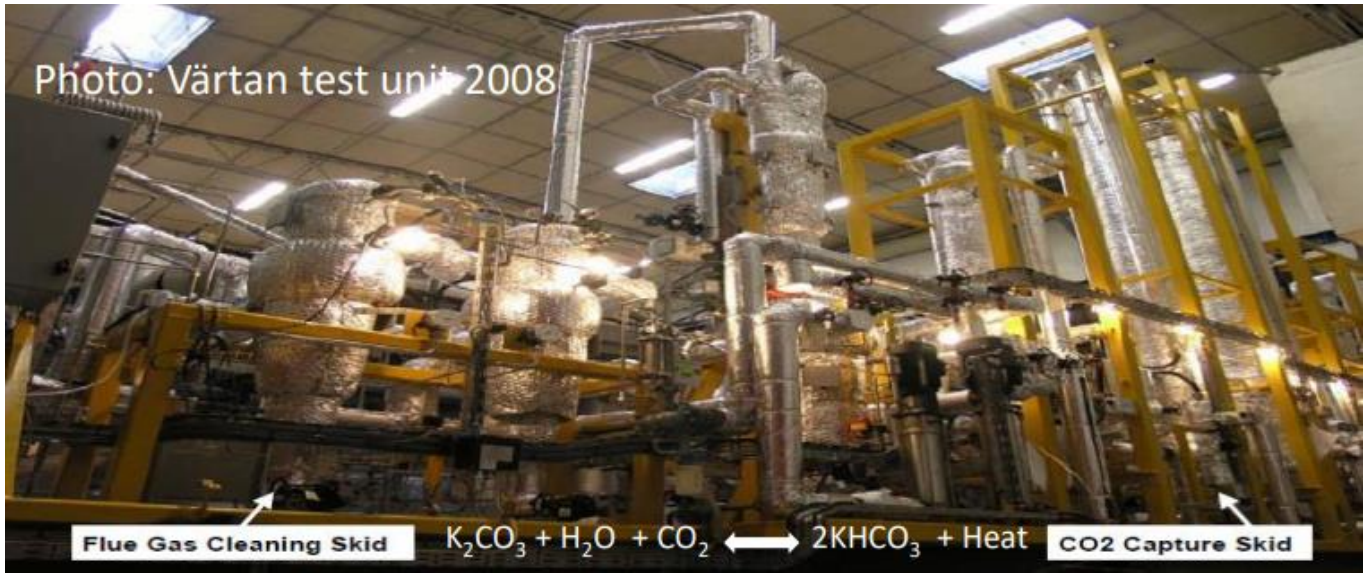
Entered: 20.02.2008 *Duration: 20.02.2029*

Heat integration in CO_2 capture

Entered: 28.10.2010 *Duration: 28.10.2031*

Method and plant for CO_2 capture

Entered: 08.09.2015 *Duration: 06.09.2036*



New patents will be filed related to experience from ongoing projects and new opportunities

*For more details, see Appendix page 36

Dilutive securities

Options

With reference to the Investment Agreement dated 23 December 2020, the investors who participated in the equity issue were granted the following options
(on a pro-rata basis):

- (i) to subscribe for shares in the Company with a total subscription amount of NOK 25m to a subscription price of NOK 4.04 per share
- (ii) to subscribe for shares in the Company with a total subscription amount of NOK 25m to a subscription price of NOK 3.23 per share

The share option set out in (i) above must be exercised by written notice to the company by the end of 2021. The share option in (ii) must be exercised by written notice to the Company within 30 days following the company entering into its first license agreement

Warrants

The Company has issued 5 million non-transferrable warrants to the Existing Shareholders prior to the investors participating in the equity issue
(on a pro-rata basis)

The warrants shall be exercisable if the 30-day volume-weighted average share price of the Company's shares on a multilateral trading facility or a regulated market, (i) at any time has increased above NOK 9.69 per share and (ii) represents in aggregate more than 5% of the shares outstanding.

If such a reference price is not available, the market price shall be determined based on the last available issue or sales price, or alternatively by an independent valuation committee to be appointed by the Company with the approval of at least 50% of the shareholders in the company who are not existing shareholders. If a valuation committee is not appointed, each party may request the Norwegian Securities Dealers Association to appoint the valuation committee

The warrants' strike price, if exercised, shall be NOK 1 per share

CONTACT US

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