

# TRANSFORMING ENERGY: WE MAKE IT WORK



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Nearly every country in the world is currently reorganizing their energy systems. The objective is to bring harmful emissions down to a minimum. To achieve this goal, there are generally three mutually-dependent approaches when it comes to industrial plants:

- 1. A conversion from fossil fuels to regenerative sources of energy**
- 2. A (further) increase in energy efficiency**
- 3. A purification of harmful emissions**

New solutions and technologies are required for all three options. These include, for example, efficient processes for the production, storage and transport of renewable energies, innovative and smart energy management systems to increase energy efficiency and pioneering technologies for the purification of environmentally-harmful emissions.

## **ACTION REQUIRED IN THE PROCESS INDUSTRY**

The process industry is particularly impacted by the extensive changes that have arisen as a result of the transformation we have to undertake to reach the global environmental targets and move towards sustainable economies.

### **1. High energy intensity**

Industrial production processes generally require a lot of energy. For this reason, the worldwide process industry is among those economic sectors with the highest energy intensity and, hence is among the sectors that produce the highest amounts of greenhouse gases.

### **2. Changes in social awareness**

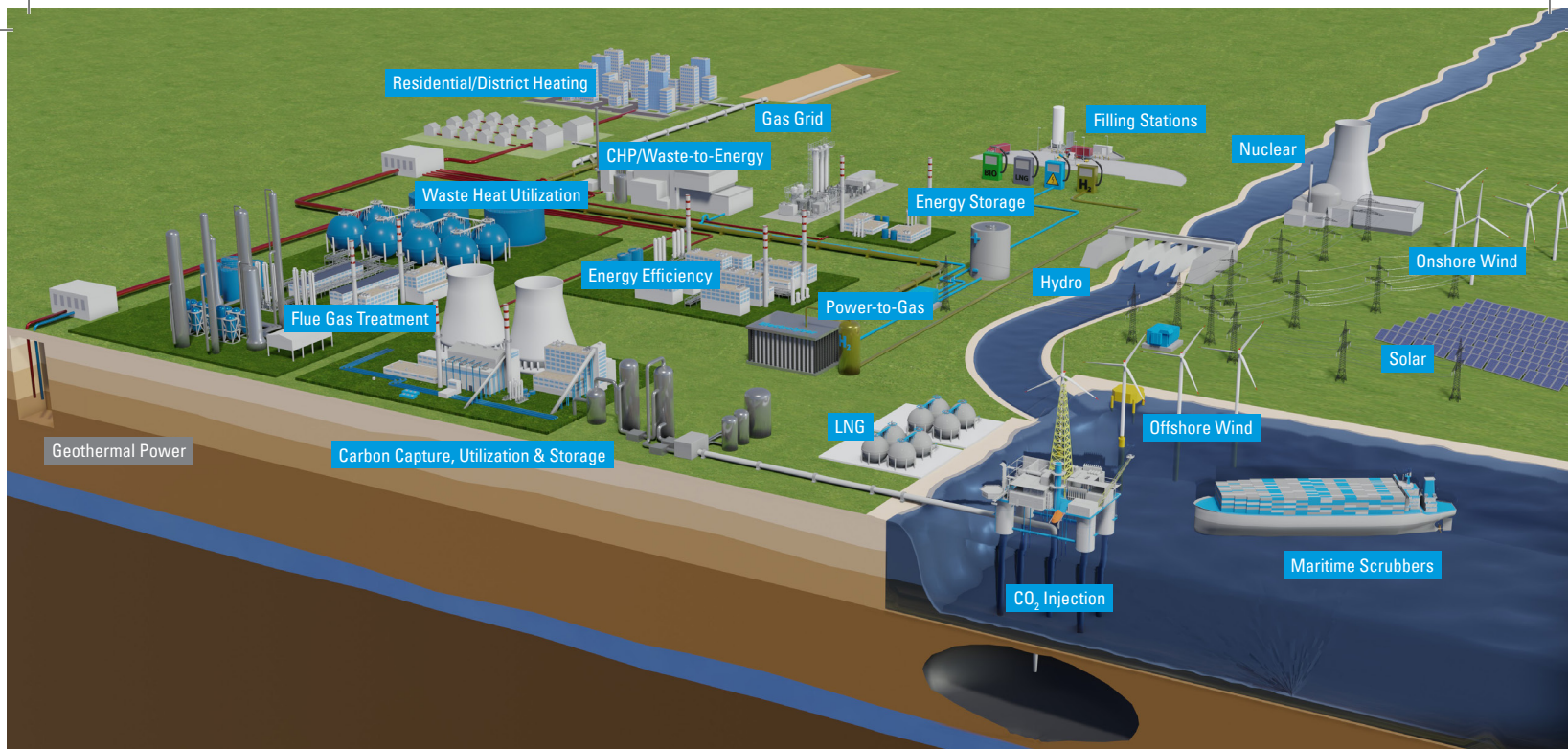
The social importance of environmental protection is increasing. Publicly, environmentally-harmful processes and technologies are regular topics of discussion and are viewed as equal to violations of environmental regulations. In addition, sustainability aspects are also becoming increasingly relevant for employees. Primarily young people believe it is important to work for companies that align with their own ethical ideals, promise them a significant degree of satisfaction and with which they can identify. Industrial companies also have to react to competition for the best talent.

### **3. Stricter legal requirements**

181 countries have formulated national climate protection goals to limit climate transformation to below two degrees Celsius compared to pre-industrial levels. As a consequence, a broad range of guidelines, laws and directives have been passed. Impact on the process industry from the flood of new regulations is especially high due to its energy intensity.

### **4. Rising energy prices**

Energy prices have been rising steadily in recent years and account for an ever-rising share of operating costs in the process industry. In many countries, energy costs are already responsible for 20 percent of the total costs of industrial plants. This share will likely continue to rise.



## OUR SERVICE PORTFOLIO

To reduce energy needs and greenhouse gas emissions in industrial plants, we offer a range of various technologies, processes and services:

### 1. Reduction of energy intensity

Services we deliver (or develop):

- Energy efficiency audits and immediate measures
- Waste heat utilization
- Smart heating network management

### 2. Use of alternative sources of energy

Services we deliver (or develop):

- Alternative energies (water, wind, hydrogen)
- Energy storage
- Power-to-Gas / gas grid / LNG

### 3. Reduction of CO<sub>2</sub> emissions

Services we deliver (or develop):

- Emission control
- Flue gas treatment
- Waste gas reduction
- Carbon capture, utilization & storage

### 4. Reorganization of the production process

Services we deliver (or develop):

- Innovative waste burning technologies (CHP / Waste-to-Energy)
- District heating developments and expansions (incl. from industrial waste heat)

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