



# Pumps for the Power Industry

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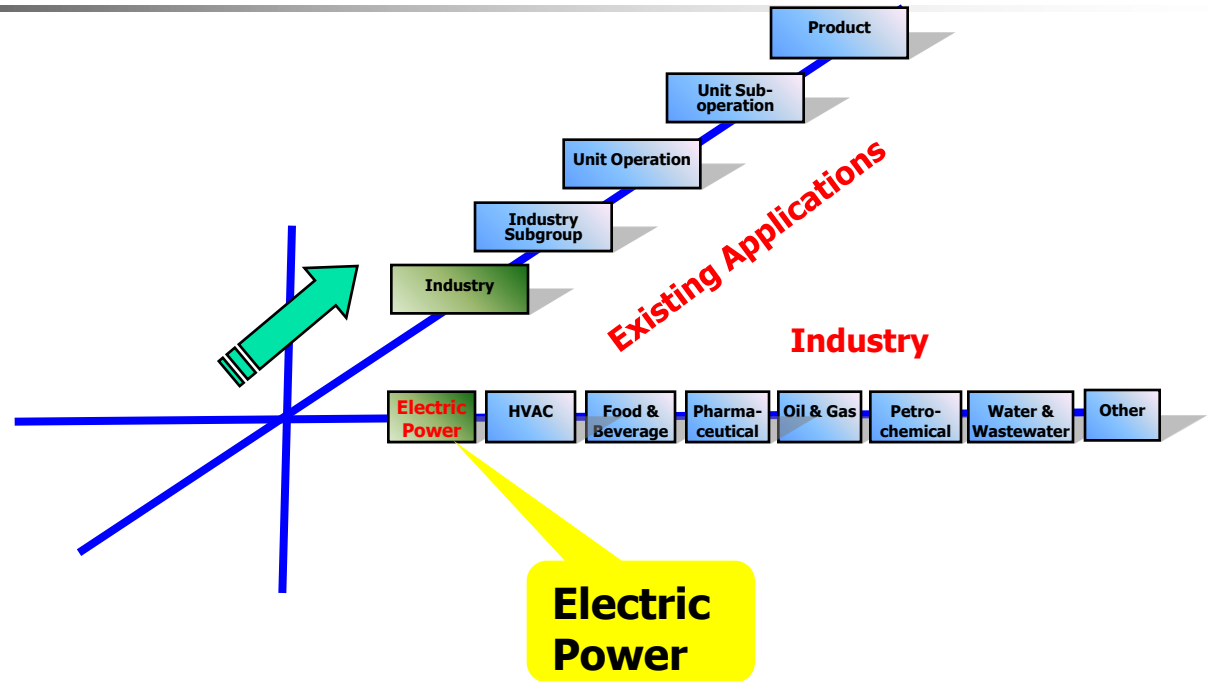
- The Universal Product Identification System value is demonstrated through the selection of a specific pump for a power plant application. There are two sequences depending on whether this is a new application or an existing one. If it is an existing application the task is to find out what pump is now being successfully used. If it is a new application the task is to find out what pumps are successful on similar service . Both sequences are shown in the following power point slides.

# Example: Existing application

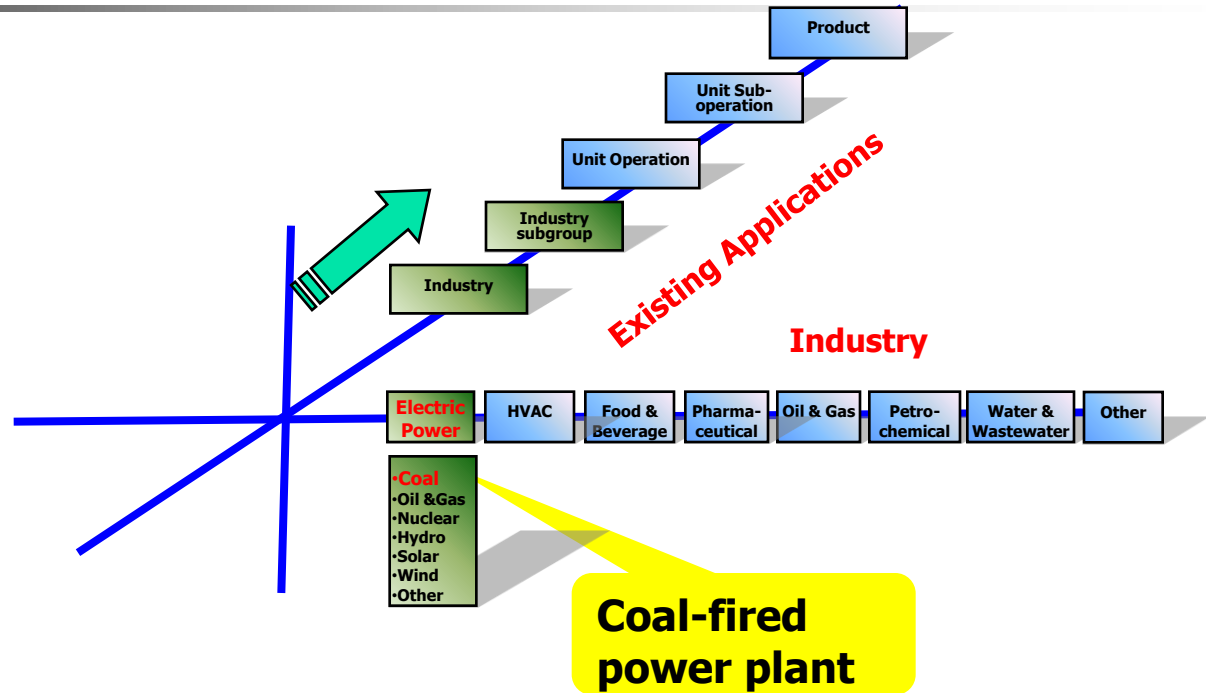
- Find a *metering pump* for FGD wastewater treatment in a coal-fired electric utility power plant.



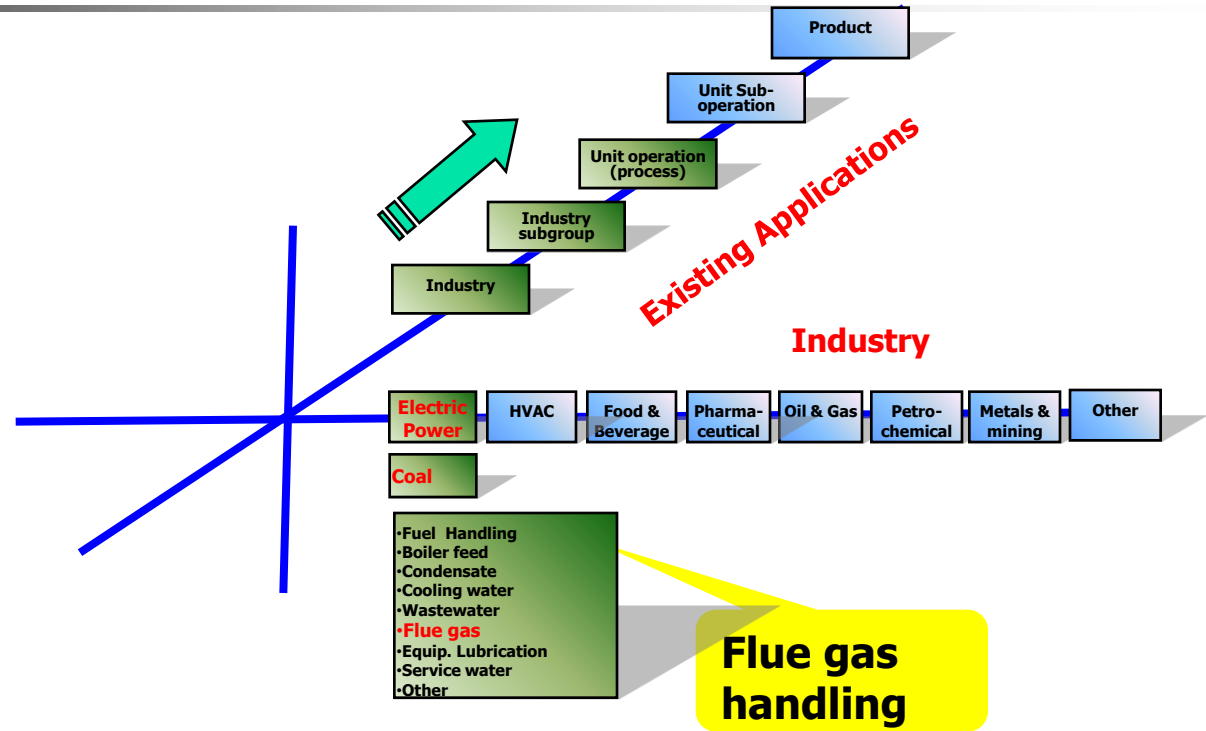
# Select the Industry



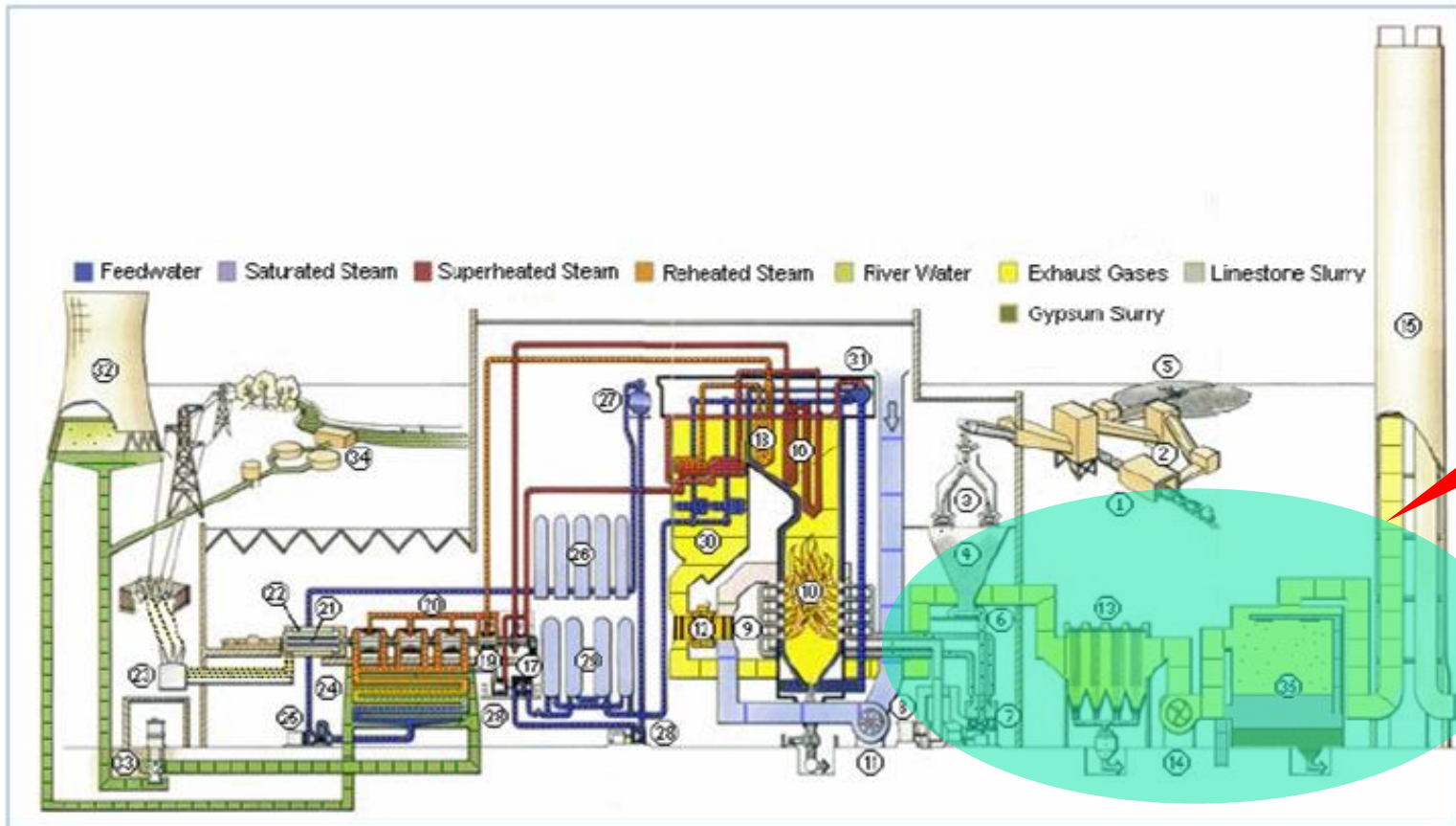
# Select the industry subgroup



# Select the Level 1 Subsystem

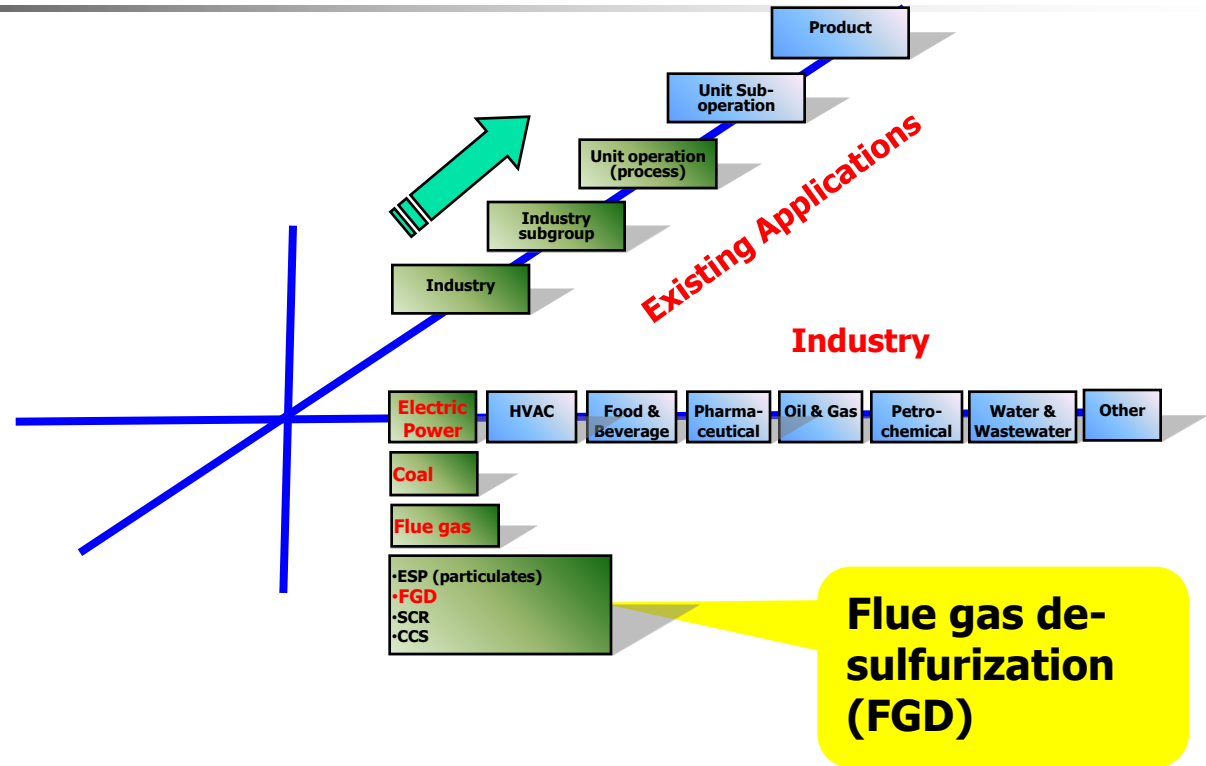


# Power Plant Schematic



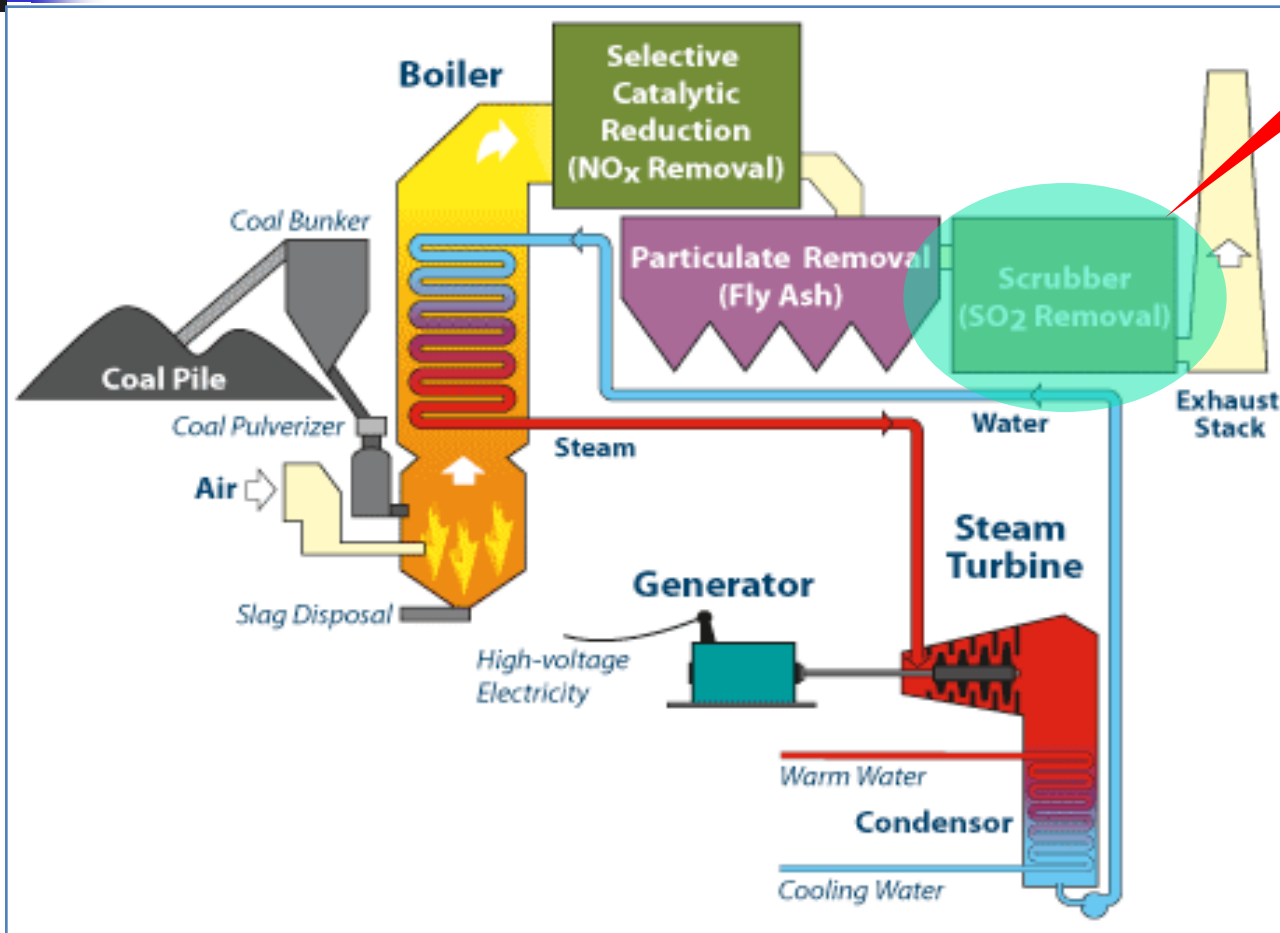
Flue gas system

# Select the Level 2 Subsystem

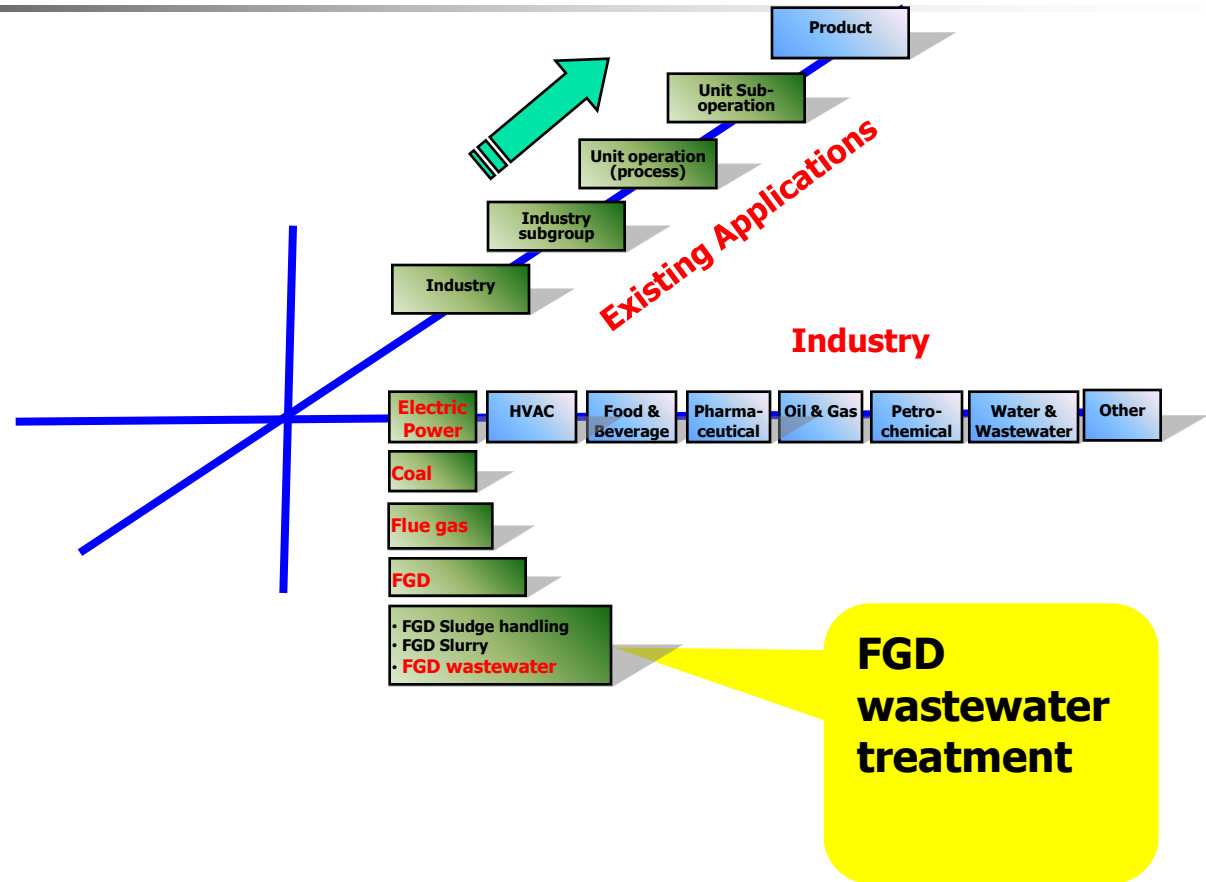


# FGD System

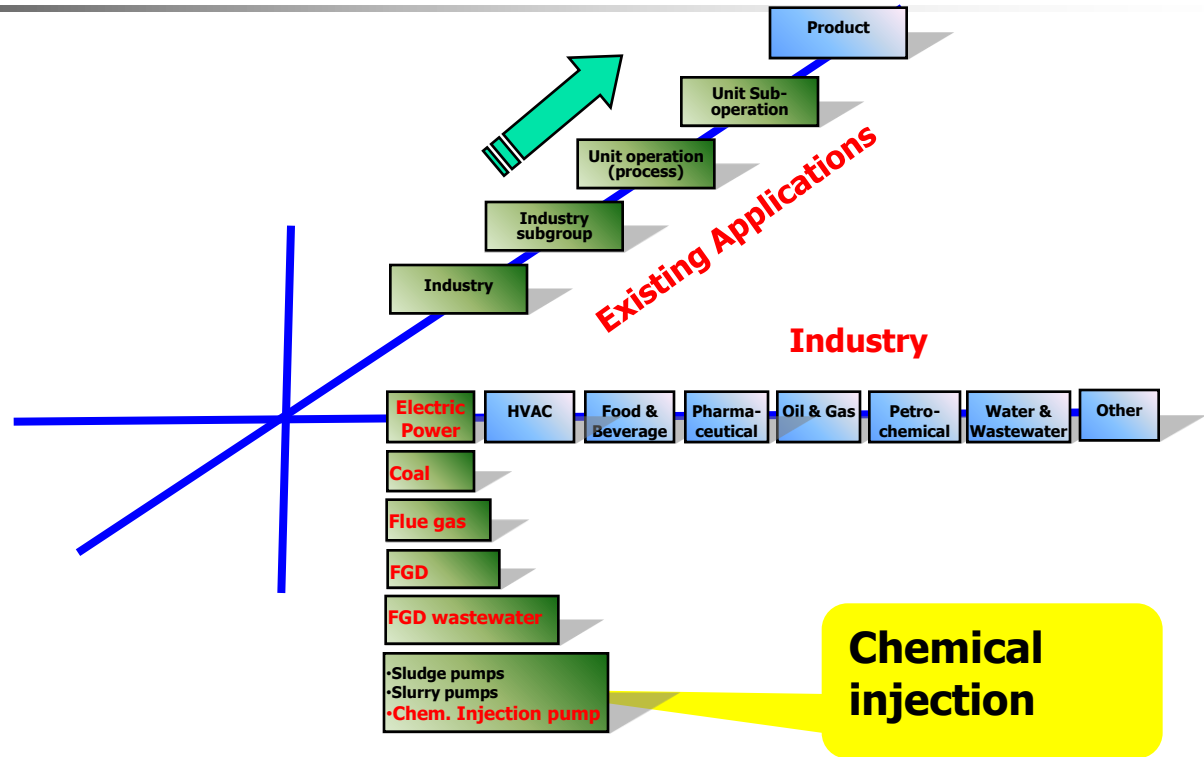
FGD system



# Select the Level 3 Subsystem

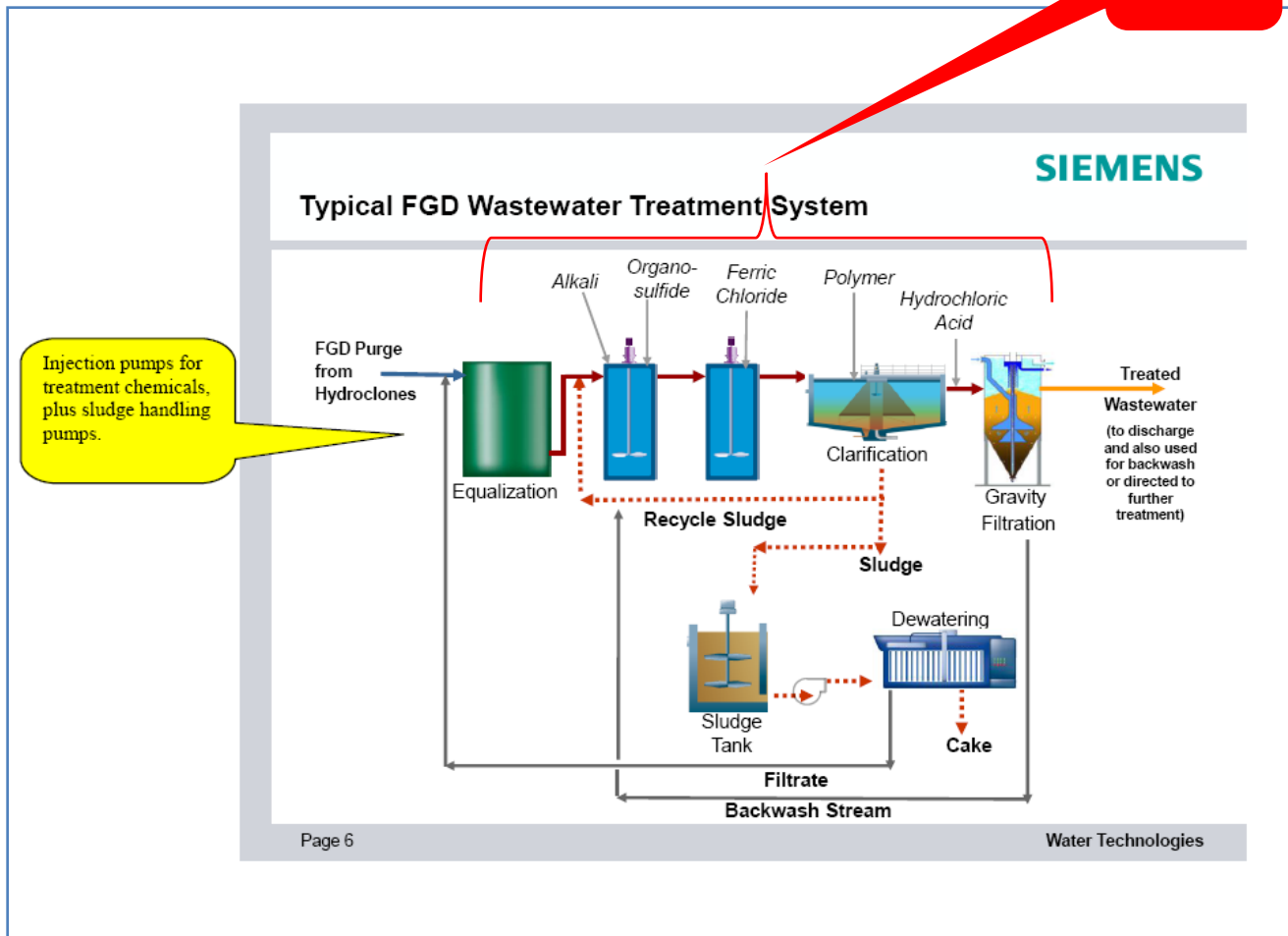


# Select the system process



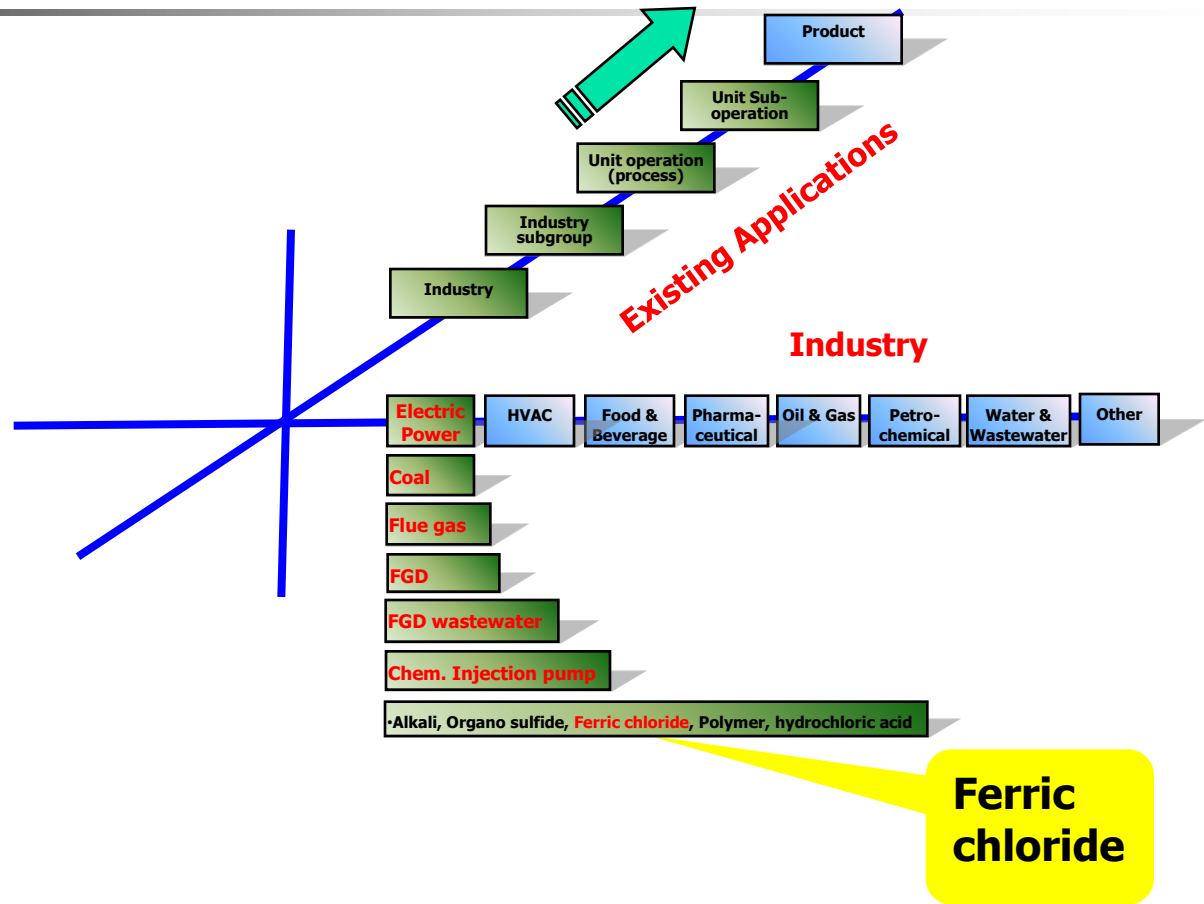
# FGD chemical injection

Chemical injections

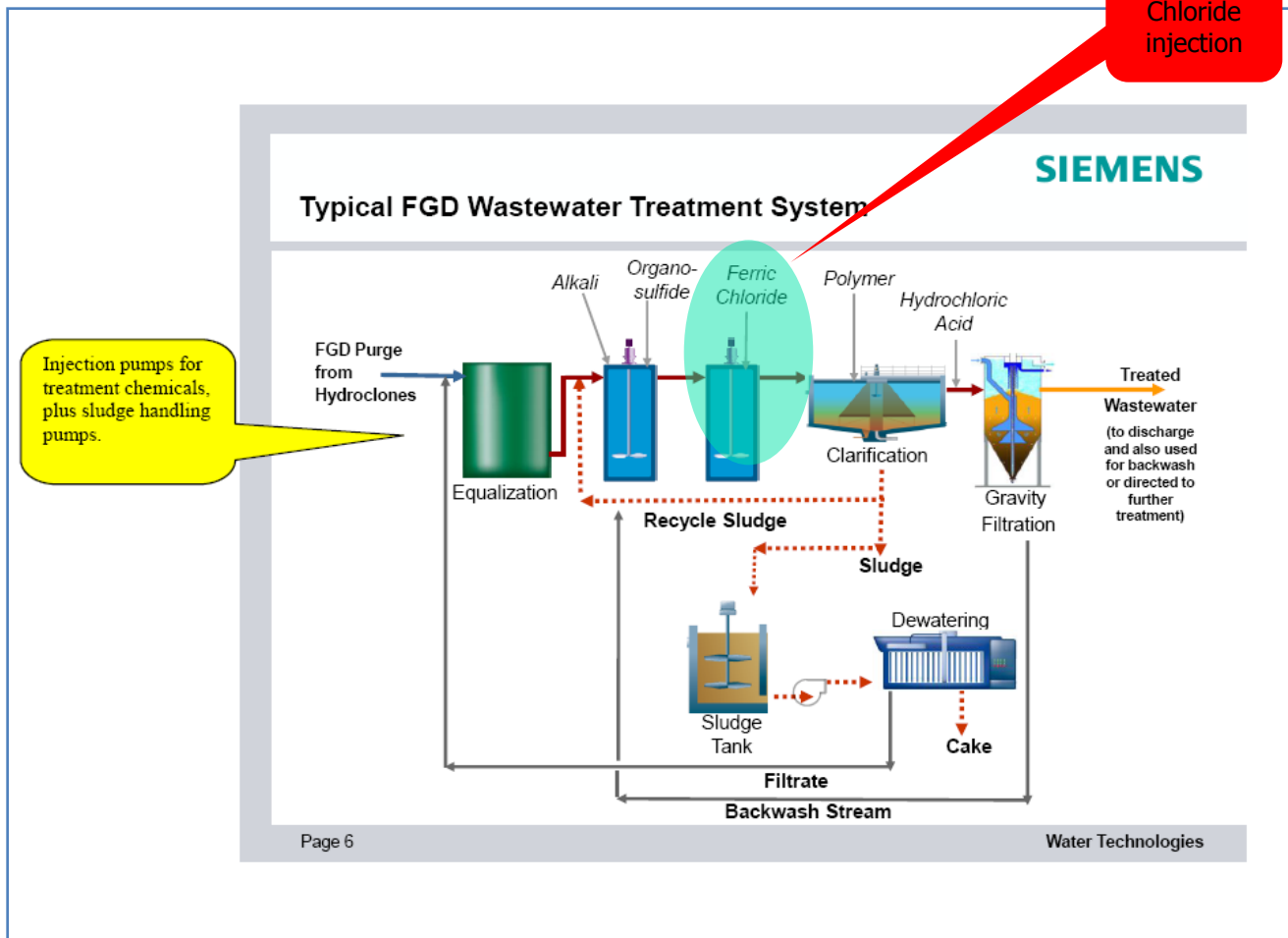


Injection pumps for treatment chemicals, plus sludge handling pumps.

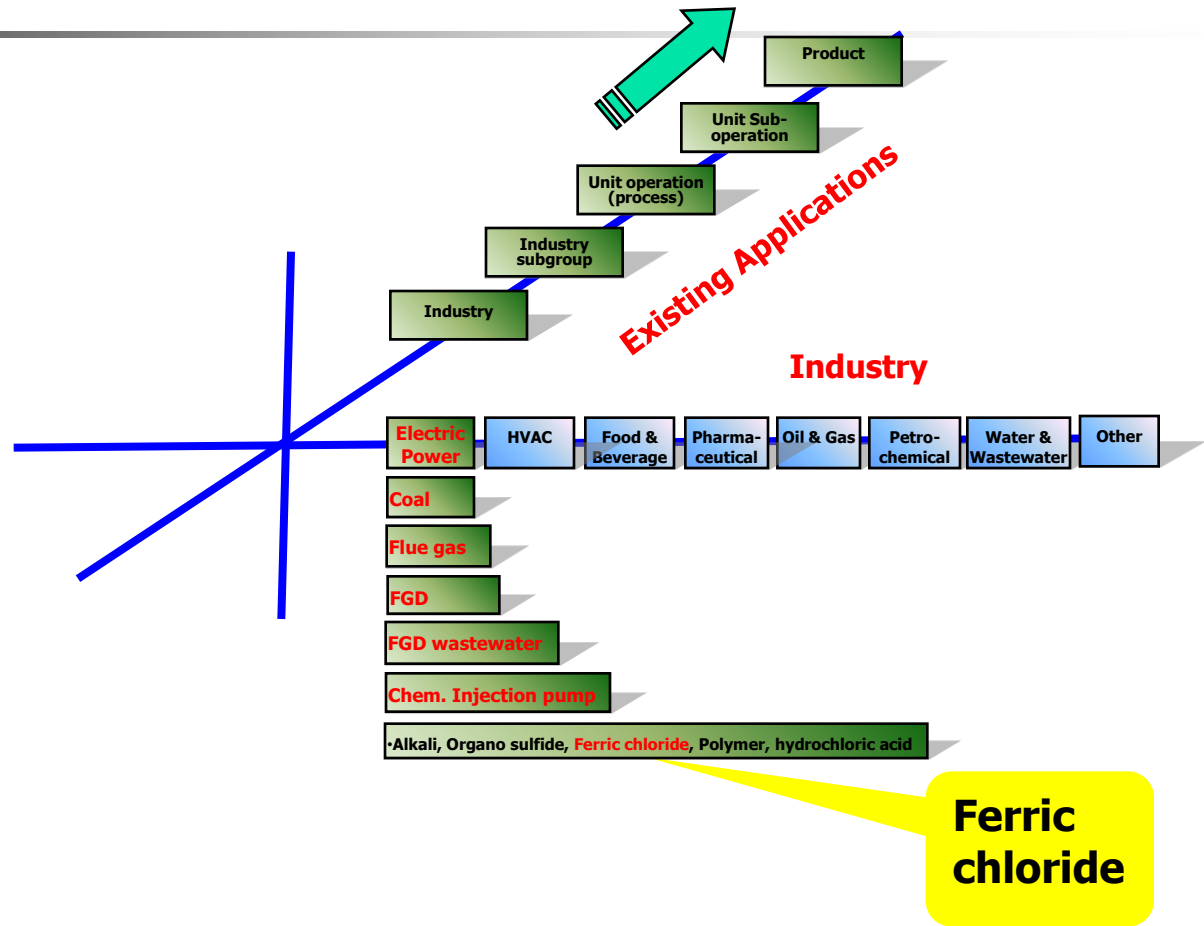
# Select the specific chemical



# FGD ferric chloride injection



# Select the specific pump

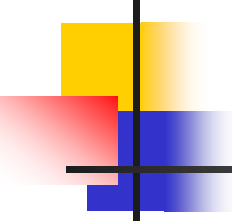




# Specific Pump Identification

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- The specific pump type which is successfully used on this application is then identified along with size and materials requirements. The advantages of peristaltic vs. diaphragm pumps are compared including concerns about erosion and corrosion. Case histories and technical articles support the summary text.



# How the system works for *new applications*

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- Process changes or new processes will require selection of a product which performs well on similar applications or meets all the performance needs of the new application.
- The selection process is reversed from the previous example. The customer starts with product and unit operation and service, and then moves to case histories for similar applications and brochures on the product. Key word searches generally shortcut the process.

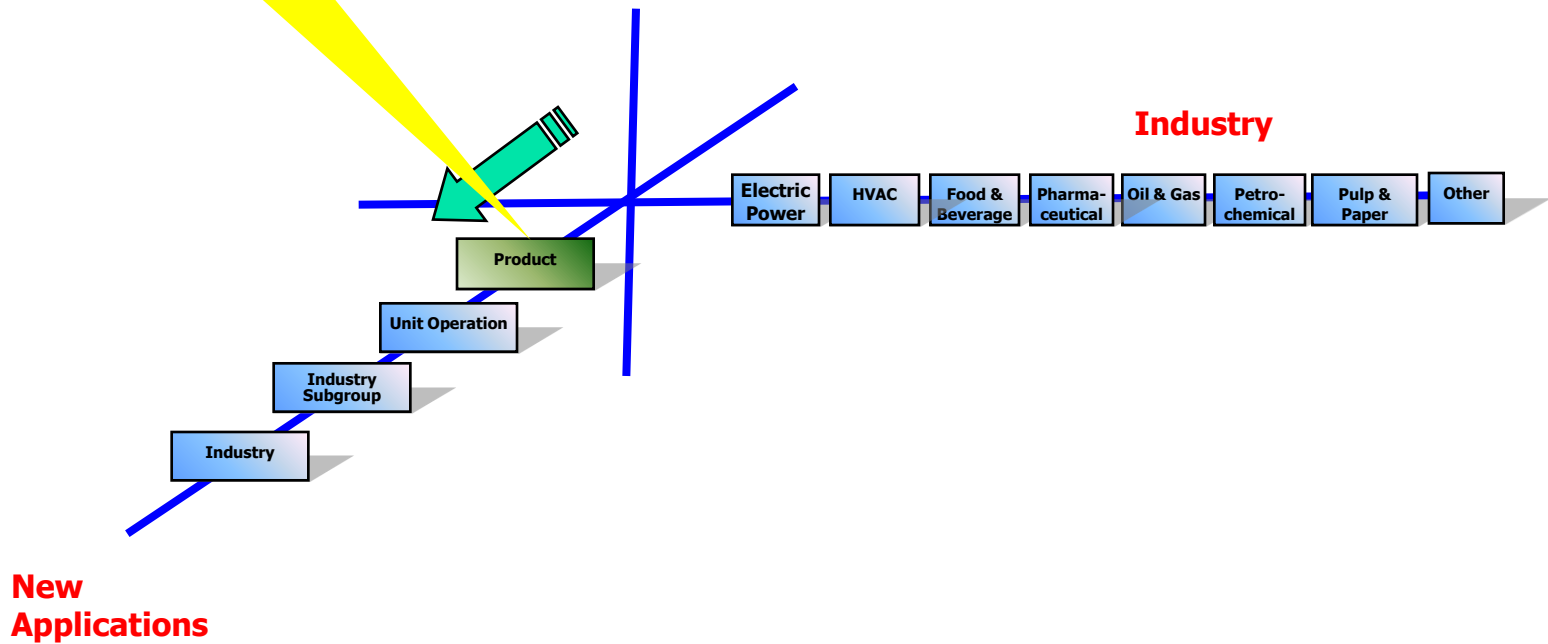
# Example: New application

- Find a **new application** for a pump handling *sodium hydroxide* in existing applications in the pulp & paper, textile, and petrochemical industries.



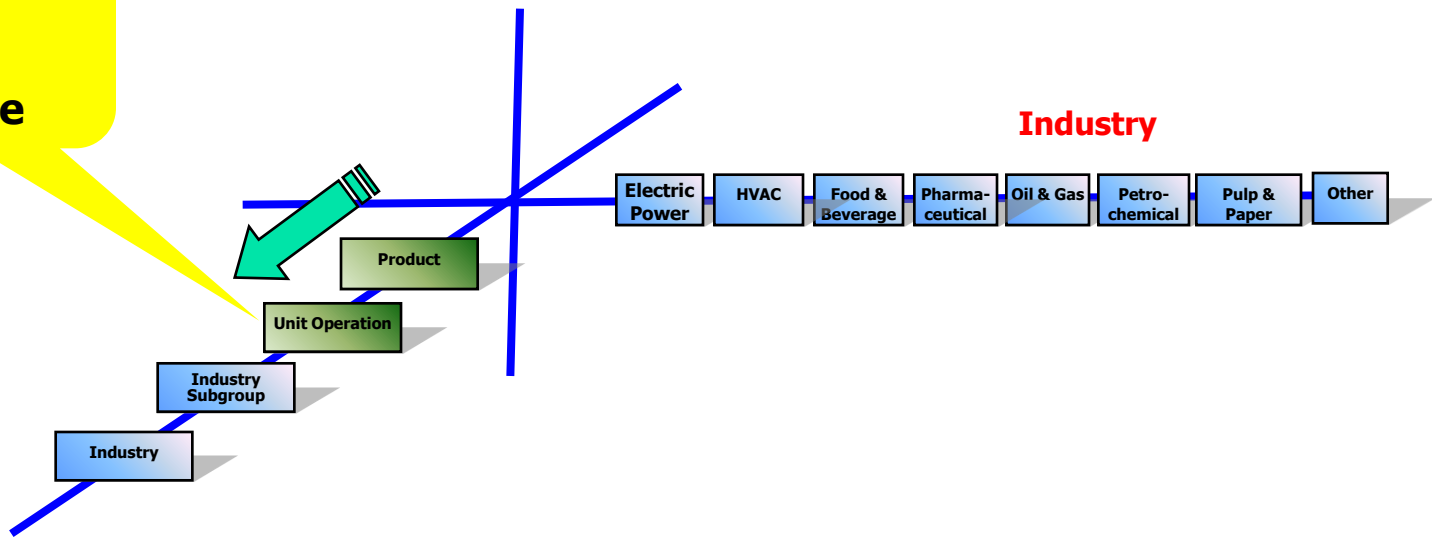
# Start with existing product

**Corrosive series pump**



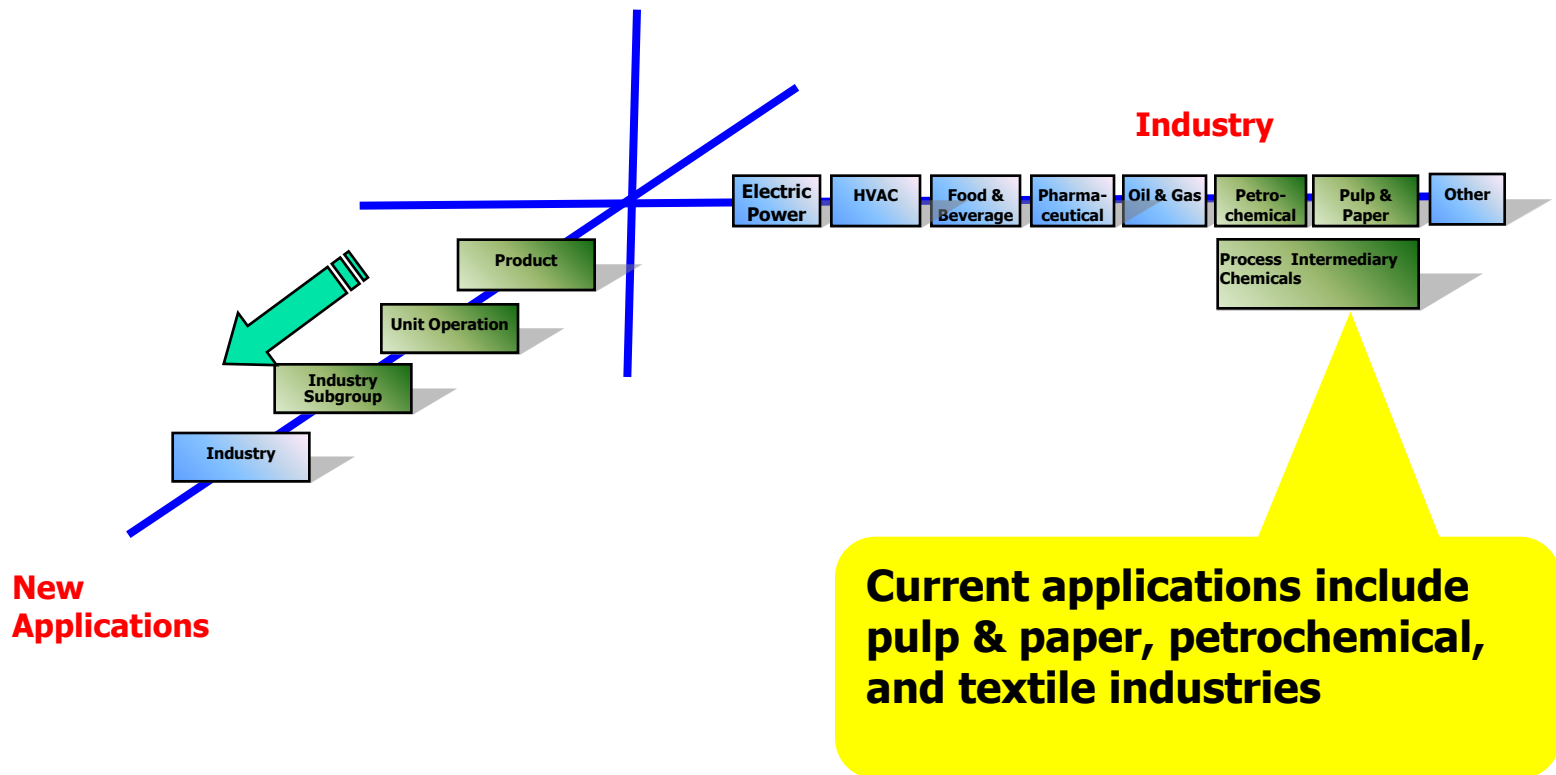
# Define operation

**Pumping  
caustic  
sodium  
hydroxide**



**New  
Applications**

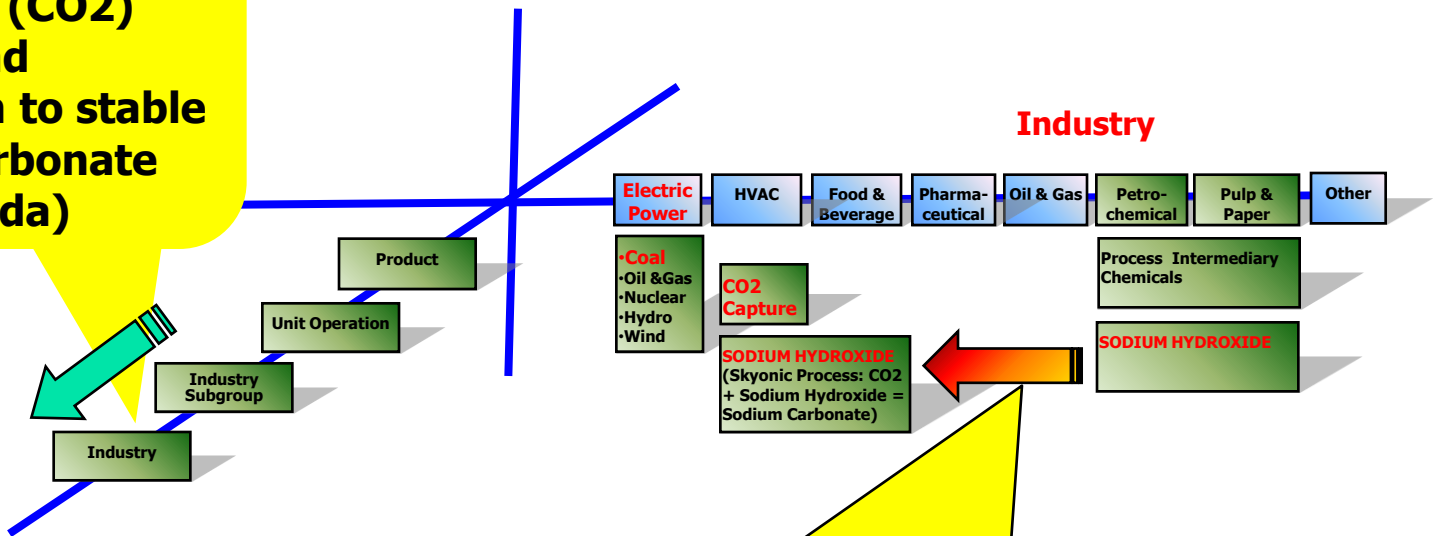
# Define current industries



# Identify new application

New application in power generation for carbon (CO<sub>2</sub>) capture and conversion to stable sodium carbonate (baking soda)

New Applications



**Migration path** from existing sodium hydroxide pump applications in textile, pulp & paper, and petro-chemical applications into emergent applications of sodium hydroxide in Power Generation for **Carbon Capture & Sequestration**.