

The "Zero Waste to Nature" initiative, launched in Ho Chi Minh City in 2018, is an effort aimed at building a circular economy. It focuses on addressing issues arising from plastic waste, developing a roadmap to establish and promote sustainable business models, and creating value chains oriented towards a circular economy. Additionally, it proposes policies to facilitate the implementation of a circular economy in Vietnam. In its initial phase, the core activity of this initiative is waste sorting at the source, carried out in Tan Phu District by Unilever Vietnam in collaboration with the CITENCO Urban Environment Company. This activity was initiated and implemented by the business community, demonstrating corporate social responsibility in sustainable development.

The Kalundborg Eco-Industrial Park in Denmark is one of the world's first industrial parks developed according to the industrial symbiosis (IS) model. In this model, distinct industries are interconnected and grouped together to achieve competitive advantages by exchanging materials, energy, information, and products (as well as cultural exchange). This collaboration between different enterprises enhances the survival and development capabilities of each business. Over time, this can evolve into a system resembling a natural ecosystem, forming an industrial ecology linked to ecological economics.

Located in the city of Kalundborg, with a population of around 15,000, the center of this symbiosis system is the Asnæs coal-fired power plant. The plant's excess heat is used to warm approximately 3,500 local homes and adjacent fish farms. Sludge from the farms is sold as fertilizer. Steam from the power plant is sold to the pharmaceutical and biotech company Novo Nordisk. Sulfur dioxide emissions from the power plant are supplied to the Gyproc company's gypsum wallboard manufacturing plant. Fly ash and coal slag are used in cement production and road construction.

Some key milestones in the development process:

- 1959: The Asnæs Power Station, a coal-fired power plant owned by Dong Energy, the largest power plant operator in Denmark, was constructed. The facility consists of three units with a total capacity of 1,057 MW, featuring a 220-meter tall chimney, and employs 600 workers.

- 1963: The Tidewater oil refinery of Statoil, Denmark's largest oil refinery operator, was constructed with a capacity of 3 million tons per year, projected to expand to 5 million tons per year, employing 250 workers.

- 1972: The Gyproc company's gypsum wallboard manufacturing plant was constructed with a capacity of 14 million m² per year, employing 175 workers. The plant's gas supply is derived from excess gas from the oil refinery.

- 1976: The pharmaceutical and biotech production facility of Novo Nordisk, Denmark's largest insulin producer, was constructed. This plant, the company's largest facility, employs 1,100 people and supplies biological sludge to nearby agricultural farms.

- 1979: The power plant began supplying 200,000 tons of fly ash and slag annually to construction material manufacturers in northern Denmark.

- 1981: Kalundborg Urban Infrastructure Company established a public hot water distribution network in the city using waste heat from power plants.

- 1982: Statoil's oil refinery and Novo Nordisk's production facility completed the construction of steam supply pipelines from the power plant.

- 1987: Statoil's oil refinery constructed a pipeline to supply recycled water from wastewater to the power plant, replacing 700,000 m³ of cooling water and 200,000 m³ of cleaning water annually with freshwater from Lake Tissot (Denmark's fourth-largest lake, covering an area of 1,230 hectares).

- 1989: The power plant began utilizing excess heat to create environments for salmon and catfish farming at local fish farms.

- 1990: Statoil's oil refinery completed the installation of sulfur recovery equipment, providing raw materials for a nearby sulfuric acid manufacturing plant.

- 1991: Statoil's oil refinery constructed support facilities for biological filtration at the power plant's wastewater treatment plant and a gas pipeline to supply supplementary fuel to the coal-fired power plant, contributing to a 2% reduction in coal usage.

- 1993: The power plant completed the installation of sulfur recovery equipment in the flue gas, supplying the Gyproc company's gypsum wallboard manufacturing plant.