

Environment & CSR

NSSMC's Environment and CSR

The Nippon Steel & Sumitomo Metal Group, having adopted its Corporate Philosophy and Code of Conduct, is determined to fulfill its social responsibility by raising corporate value through appropriate practices and contributing to development of society.

▸ NSSMC Sustainability Report 2015

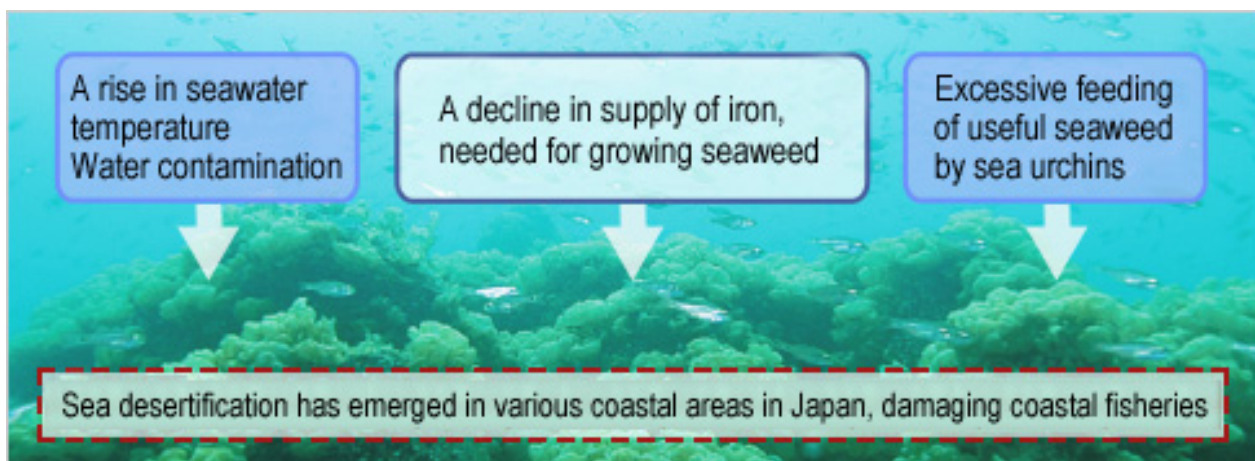


Creation of Sea Forests by Utilizing Steel

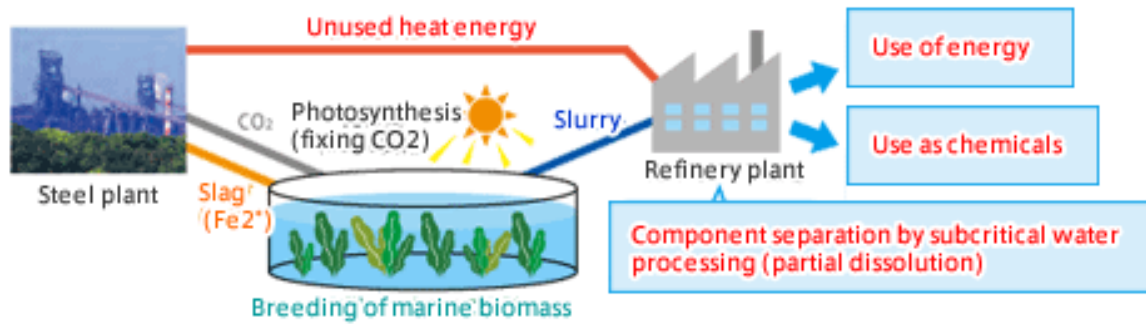
In recent years, a new environmental problem that has been identified is sea desertification, meaning that the sea becomes like a desert owing to disappearance of seaweed from the water. The environment for growth of marine life deteriorates when this happens, causing serious damage to coastal fisheries.

It was found that a decline of iron, which has been carried from the forest areas to the sea in river water, is one of the causes for sea desertification. To offset a part of the decline in the supply of iron from nature, NSSMC has created iron supply units composed of humus, soil and steel slag, the latter being a by-product of the steelmaking process that is rich in iron. NSSMC is supplying this product and promoting regeneration of seaweed beds.

Present marine water environment



* Sea desertification: With a decline in kelp, brown seaweed, and other varieties of seaweed, the sea bed loses ability to support life.



Production of energy and chemicals using seaweed (sea biomass)

The Nippon Steel & Sumitomo Metal Group is promoting a seaweed bed regeneration project using a seaweed nutrient source supply system with steel slag as a raw material. Nippon Steel & Sumikin Chemical is also developing technology with which the regenerated seaweed is processed using subcritical water and subcritical methanol to produce bio-resin and bio-oil.

This technology is a core of marine biotechnology, and this investigation has progressed in cooperation with a researcher (Professor Sako at Shizuoka University) who has detailed knowledge of this field.

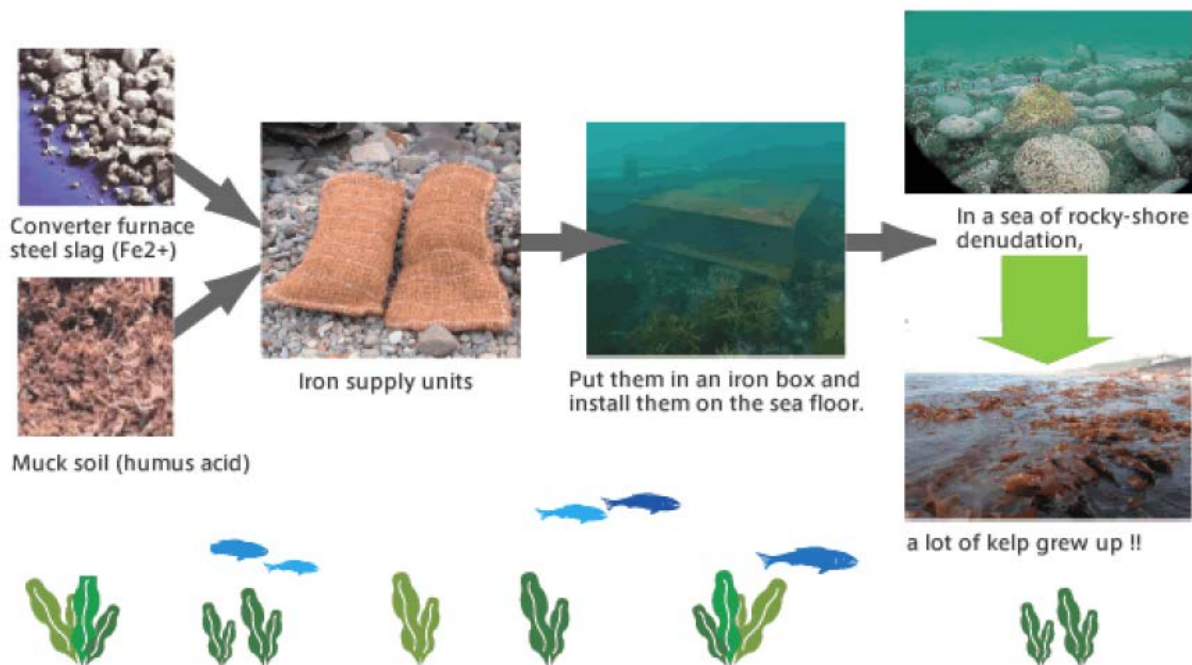
Initiatives to improve the marine water environment by use of steel slag products

Iron is essential for seaweed growth, especially when gametophytes, known as seaweed buds, mature. Therefore, steel slag, which is a byproduct of steelmaking, is released into the sea to supply iron so that various marine organisms, such as seaweed (like kelp) and phytoplankton, can be reactivated.

Forming iron supply units composed of steel slag with soil and humus obtained by fermenting chips of waste wood; placement on the sea floor enables artificial supply of iron.



Six months after installing iron supply units, kelp grew nicely 30- meters from where the units were placed. After two years and again after three years, it was confirmed that the positive effects had continued. (Mashike Town, Hokkaido)



Mechanism that allows iron power to grow seaweed

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資料來源：<http://www.nssmc.com/en/csr/env/circulation/sea.html>