



## By-Product Synergy and Green Brownfields for Greater Los Angeles

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The Greater Los Angeles area could benefit from two inclusive, collaborative programs developed by the United States Business Council for Sustainable Development. One is an industrial ecology process called By-Product Synergy that is helping companies and cities cut emissions and energy use, reduce hazardous and other waste, and create new revenues. The other is a Green Brownfields process that offers a way of resurrecting disused industrial sites as ecological uplift zones providing benefit to all involved.

### BY-PRODUCT SYNERGY

The underlying concept behind By-Product Synergy (BPS) is that everything in the Earth's natural ecosystems is used by some member of it, so nothing is wasted. Therefore, the BPS philosophy is to create a diversified industrial ecosystem that relies on cooperation among the actors involved. Industrial plants and city departments find ways to use each other's waste material as resources to minimize the amount of virgin material and energy they consume, as well as the waste and emissions they produce.

Through effective, safe collaboration, the process strengthens regional economies, reduces pollution, cuts energy use and greenhouse gas emissions, and creates additional revenue streams for participating companies. Program staff collects information from participating organizations on their waste streams, inputs of raw materials, transportation, energy use and other factors. They then facilitate interaction between participating engineers and business managers to find opportunities, share ideas, and connect the dots.

For instance, a Gulf Coast project involving 40 Dow Chemical facilities uncovered synergies that would reuse 155 million pounds of waste products each year and provide annual energy savings of \$15 million. It also estimated CO2 emission reductions of 108 million pounds per year, according to a case study by the US Department of Energy, which co-funded the project.

By-Product Synergy is currently being implemented in Chicago and Kansas City, and is being developed in several other cities around the United States. In the United Kingdom, the national government established a program in 2005 funded through Parliament that is producing the best results of any environmental program being funded.

With raw materials prices escalating rapidly, by-product synergy is a practical survival strategy for the years to come. Manufacturers devalue millions of dollars of inventory every year as waste – even the leanest manufacturing process does not eliminate the problems of yield loss or occasional off-specification product. Instead of total loss and disposal of these resources, by-product synergy solutions can identify new uses and can naturally lead to business savings.

### GREEN BROWNFIELDS

Inactive industrial sites and other "brownfield" properties would be transformed into productive green space for the people of Greater Los Angeles under the Green Brownfields initiative developed by the United States Business Council for Sustainable Development.

Brownfield sites are properties that are underutilized and difficult to develop because of contamination concerns. These sites, many of which are located near rivers and coastal estuaries, nonetheless can have significant ecological potential. And while brownfield reclamation is not new – there is plenty of activity throughout the nation in returning brownfields to commerce – the new concept that this project offers is the use of market forces to accomplish ecological outcomes as opposed to a new strip center or apartment complex. This approach offers unique opportunities for public benefit and for the landowner. The council works with local, state and national agencies, as well as non-profit groups, to identify and implement market-based strategies to revitalize those properties as productive ecosystems. For instance, the initiative might receive financial support from a company that is required to recreate a wetland or from a flood district that needs to set aside land for flood retention.

The Green Brownfields Initiative would compliment and extend existing efforts across the region to convert rivers and other waterways to floodway parks. It would do so with a combination of public funds, foundation grants, and support from private owners of selected brownfield sites.

The Los Angeles region is an ideal setting for a project that has the potential to be widely replicated across the country. As one of the nation's most industrially active regions, it is blessed with a robust economy that produces a wide array of goods. An inevitable legacy of this industrial success is a sizeable inventory of brownfields. By converting some of these sites to green space, the initiative will enhance the quality of life in this region.