

Motion Adopted by the Participants in the Third International Wetlands Conference*

Recognizing the international importance of the River Loire in terms both of its size and its biological richness;

Recognizing the scale of the development projects which are likely to direct both the short- and long-term integrity of the River's catchment;

Recognizing the absence of a comprehensive impact study on the possible consequences of these management projects;

Recognizing the effects of comparable projects in other countries and the current state of scientific knowledge of the international community;

Recognizing that France is a Contracting Party to the Ramsar Convention and a member of the European Community;

The participants of the Third International Wetlands Conference

— urge that, as a prerequisite to any further developments, a general study of the functioning of the River system be undertaken, including predictions of the impacts of the proposed developments;

— invite the French government to apply the European Community legislation and to include the Rivers of the Loire and the Allier on the List of Wetlands of International Importance.

* Rennes, France, 19–23 September 1988; published as an initiative that ought surely to be emulated elsewhere.—Ed.

'Valorga'—A Revolution in Treatment of Household and Industrial Wastes?

Some sixteen million tonnes of household wastes are produced each year in France—an average of *c.* 800 grammes per person per day—compared with an estimated 1.3 kilos per person per day in Europe as a whole, and 1.8 kilos in the United States. The elimination of these vast amounts of waste materials poses serious problems for local authorities, and yet this 'waste' represents an enormous potential for energy and agriculture.

At present such household 'waste' is dealt with in a number of ways, the most common being tipping into pits or dumps, and incineration. Each method has its drawbacks regarding protection of the environment, effective use of land, and the cost of the treatment, the last of which depends on the possibilities of marketing any by-products. The method developed by *Valorga*, a company established in May 1981, reconciles these drawbacks. Its process offers considerable advantages: in destroying the waste materials, it creates valuable by-products that result from methanization and serve as resources which can be directly exploited by municipalities and industry.

The *Valorga* method, a continuous system for the re-use of urban waste, combines two processes that take account of the waste's composition. One is non-stop *methane fermentation*, at a high concentration of dry matter, of the biodegradable content (vegetable matter, paper, cardboard, etc.), while the other is *combustion*, with special treatment of evolving smoke and of non-methanized matter (including wood or tissues with a high calorific value). Fig. 1 is a diagram of the layout.

The *Valorga* solution of the waste-disposal problem is interesting from the energy viewpoint as the biogas produced (60–65% methane) can be fed into the national gas-distribution network (Gaz de France), and hence employed for the production of heat or transformation into electricity. The system also produces homogeneous combustible waste (170 kilos per tonne) which the combustion chain can then transform into steam or superheated water for industry and heating systems, or into low-calorific energy for the heating of glasshouses.

The method is also of interest to agriculture, as it pro-

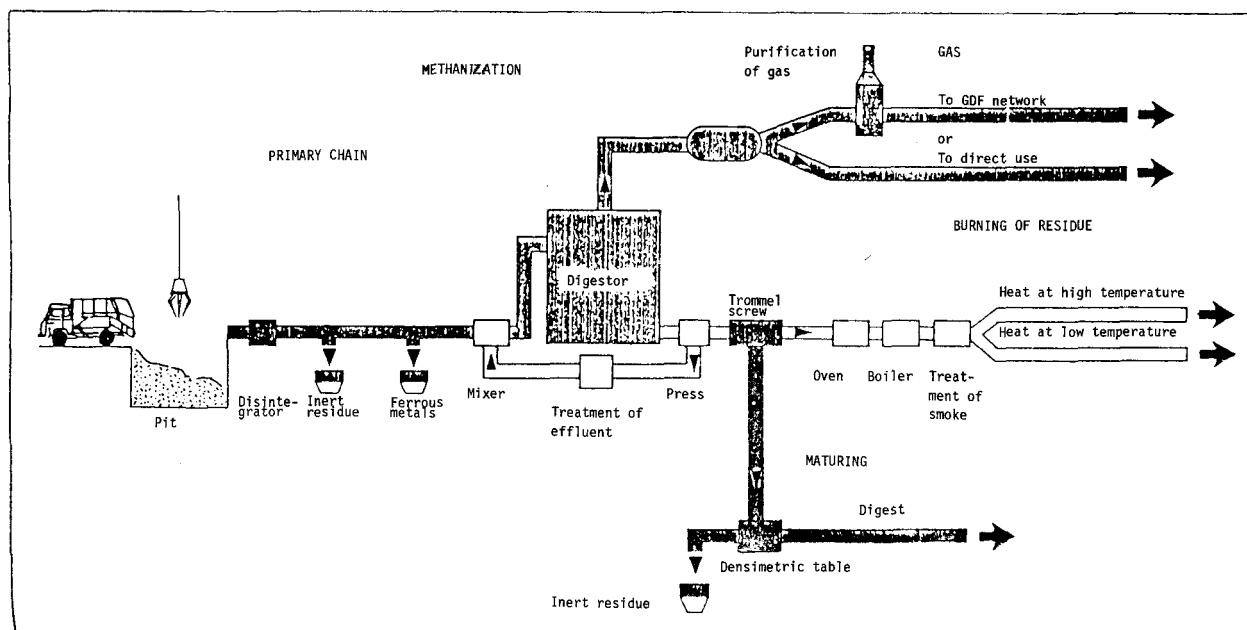


FIG. 1. *Valorga* System for profitable disposal of urban waste.

duces a 'digest'—an organic fertilizer with special qualities resulting from the methane fermentation process. This fertilizer has less than 5% inert matter and contains important ingredients such as nitrogen, potassium, and phosphorus, that thus become available for plant growth—for which the three elements mentioned are, actually, essential. At the end of the process, some 90% of the matter can be re-used. Thus from 100 tonnes of average household refuse it is at present possible to produce 15 tonnes of gas and 40 tonnes of organic fertilizer.

The system also has indisputable environmental advantages, including the purifying of smoke with control of its ash and chloride content, absence of odour, and the small proportion of inert terminal residue for dumping (the 10–15% of metals and glass). In addition the *Valorga* system has economic advantages that are greatly appreciated by municipal officials: it is in fact compatible with other techniques, which it makes more economically efficient. The methanization unit, for example, can be added to a series of waste-disposal units before the dumping stage, and replaces the composting site—thus improving the efficiency of existing equipment. The process accordingly leads to augmented self-sufficiency in energy-use and to indirect activities which create jobs at the local level.

Valorga involves a series of innovations, including non-stop methanization at a high concentration which represents an internationally important technological advance. It was developed through an extensive research and development programme which was supported by interested public authorities and also involved the EEC and numerous financial and industrial partners.

The method has already proved its value on various sites in France. At La Buisse (Isère), for example, a full-scale pilot unit is in operation, while at Amiens a plant dealing with more than 100,000 tonnes of waste per year came into effect in April 1988. Other plants are being established, including one in Nîmes which, profiting from knowledge gained over the last five years, is expected to be the most modern of its kind. Besides well-advanced contacts with a good many European countries, negotiations are under way in Japan and the United States. Further details may be obtained from VALORGA, Z.I. de Vendargues, 5 rue de Massacan, B.P. 56, F 34740 Vendargues, France.

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The Joseph W. Jones Ecological Research Center

The Robert W. Woodruff Foundation, Inc., has announced plans for a major new ecological research centre at Ichauway, a 28,000 acres' (11,340 ha) reserve in south-west Georgia, USA, praised by the US Nature Conservancy as a 'national treasure of biological diversity'. Ichauway, located in Baker County and containing what may be the largest remaining unbroken tract of Longleaf Pine (*Pinus australis*) upland forest and undisturbed wiregrass understorey in the United States, will be preserved intact and dedicated to research and education in the ecological and conservation sciences.

Ichauway contains a number of exceptional natural communities and populations of at least thirty rare and endangered species. It includes 14 miles (22.4 km) of the Ichauway–Nochaway Creek, a blackwater stream, and 12 miles (c. 19 km) of the Flint River, a brownwater stream originating in the Georgia Piedmont region. Assembled in the late 1920s, Ichauway was the private shooting reserve of the late Robert W. Woodruff, longtime Chairman of the Coca-Cola Company and a noted philanthropist and outdoorsman.

The centre, to be known as the Joseph W. Jones Ecological Research Center, is being established as a self-guiding, independent research and educational institution. In addition to conducting basic and applied ecological research and monitoring relevant to the understanding of natural and managed ecosystems, the centre will attempt to establish and maintain long-term, experimental, and reference, studies of ecosystems; serve as a regional benchmark in the growing global network of monitoring stations for environmental quality; bridge basic research with applications and make this knowledge available to appropriate audiences; promote multidisciplinary research and exchange of knowledge; promote cooperative research and training

activities with other institutions, agencies, and individuals; instruct students, agency personnel, conservation professionals, landowners, and decision-makers, in the understanding and management of natural and managed ecosystems; promote a broad awareness of the importance of ecological relations to human welfare; and develop a greater public concern for the conservation of biological resources and environmental quality.

Dr Gene E. Likens, Director of the Institute of Ecosystem Studies of The New York Botanical Garden, is chairing the Scientific Advisory Committee that will advise the Foundation on the new research centre. Also serving on the Committee are Dr Arthur W. Cooper (Head of the Department of Forestry at North Carolina State University), Dr Jerry F. Franklin (of the College of Forest Resources at the University of Washington), Dr Eugene P. Odum (Director Emeritus of the Institute of Ecology of the University of Georgia), and Dr Walter Rosene (a wildlife biologist from Gadsden, Alabama) who is considered to be the world's foremost living authority on the Bobwhite Quail (*Colinus virginianus*). The Foundation recently launched its search for a scientific director of the new research centre.

Core funding for establishment and operation of the Joseph W. Jones Ecological Research Center will come from the Robert W. Woodruff Foundation, Inc., one of the US South's major independent private foundations. The Foundation makes grants primarily in the areas of health care, education, the arts, child care, and youth services.

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