DOMIUS Project – by Andrew Hunter

Background

The following proposal has been circulating in the UK, looking for venture capital funds. Refer to http://domius.co.uk/. Here is an extract

"The **DOMIUS** project revolves around an Integrated Utility System ('IUS') concept that provides all utility services (power, heating and clean water supplies, wastewater and refuse wastes disposal) from a single compact module, as an installation directly annexed to a property.

The property is then almost completely independent, with little need for network connections to centralized utility services through the electricity, water and sewer grids. The IUS unit provides a high level of energy efficiency, since all fuel energy, plus that from waste destruction, passes through as power and heat services to the site. Also, using a renewable fuel then makes this a low- to zero-carbon site.

The founder estimates that fuel costs could decrease by 50% for the average household so theoretically, all things considered, the product could have an enormous market potential in the residential housing market alone before looking at other industries."

Comments

The idea of an integrated utility system for residential, commercial and even industrial sites is not new. It is probably the case that if it could be done economically, it would have been done already. However, that view may be out of date, given the great strides that have been made and will be made in the technologies that are integrated into this idea.

Task

The Domius design has a number of parts that are semi-independent.

1. So first analyze these - what is a typical installed cost for each of the following - the Onsite Waste Water Technology (OWWT) system, the renewable fuel system, the boiler system and the thermal storage systems for the following users -
    (a) Local hospital (regular or hospice)
    (b) Walmart type of shopping center
    (c) "Typical" and "large" households quoted in the Domius paper

2. How much space is needed for a "package"?

3. Can these systems operate effectively and profitably for long periods (a) on their own and (b) with the other services at extreme levels? In other words, how much flexibility is there in a given system once it has been installed?

4. What is the typical set of regulations that an integrated system has to obey? This applies to water quality in particular.

5. Do the local authorities look favorably on this concept or do they resent the intrusion into their world of providing a common service?

Investment Assessment

This concept is likely to be very, very expensive if done properly because balancing the 5 sectors mentioned above is tricky. Therein lies the uncertainty of installed cost to set against the claim of a L1,500 to L2,500 per year operating cost.

In the end the concept is competing against much cheaper centralized services. And they provide the expertise to solve the many technical problems that will occur. Or does distributed technology win out?