

A 'small data' approach to energy saving for industry

December 28 2016, by Rebecca Parsons

With his eyes gazing at the countryside in County Meath, a dozen miles north-west of Dublin, Vincent Murray, project technical leader at [IES](#), is fully immersed in industrial environments. He is one of the developers of the company's simulation tool for energy saving in factories, now being deployed across three demo sites in the textile, food and foundry sectors, supported by the REEMAIN project.

The key aspect is to consider the production environment holistically, looking at four fundamental components: the building shell, the services running in the building, the manufacturing process and the allied services. "This is something that hasn't been done before, at least not with the level of integration we propose. What we wanted to do is to get the whole picture. You can only make informed decisions on what to change if you get the whole picture", says Murray.

The tool applies a simulation approach to manufacturing where both the building elements and all production systems can be modelled. It enables a factory as a whole to be analysed in one place, while identifying the areas to be optimised and the renewables to be included. "We're talking about integrating all the different components of a factory, with a high degree of flexibility to accommodate the specific requirements of different industrial environments", Murray adds.

One of the obstacles the company has managed to overcome is access to data. "The main characteristic with our tool is that you can actually get started on the basis of just one utility bill. We wanted to build a system

that would work even with limited information input, which is why it's called [Rough Cut data modelling](#). It sounds simpler than it is".

At a time when "big data" seems to be the main paradigm, IES offers an almost antithetical approach based on "small data" to kick-start the analytical process.

One of the common problems with industry is that every factory is different and may need a radically different approach. "If a tool existed to help site managers optimise [energy consumption](#), that would definitely be a great step forward", confirms Mauro Sampellegrini, Innovation manager at the Bergamo branch of [Confindustria](#), Italy's industry association.

"We are the second European province by industrial density, with sectors as diverse as paper, textiles, wood, metal, rubber and more. And we're a country where energy is expensive. Many of our companies have been very creative in finding their own path to energy efficiency, but we haven't yet seen a solution that would be sufficiently replicable across different plants", he adds.

And that's where the described [simulation tool](#) might meet demand. "First, we help users start the Rough Cut approach, obtaining an hourly profile of energy consumption", Murray explains, "From there, a site manager can add information to refine the schedules, until we reach a level where a 'factory gate' analysis can be undertaken. Factory gate analysis is an initial level where web based analytics can help identify opportunities and focus the more in-depth analysis which can follow."

The project's next challenge is to take the solution to the market. "We need to dive into the real market to see how the manufacturing world will react to it. Site managers may not be ready to embrace this yet, but I believe that many will end up convinced of the added value. And our

figures are our best argument", Murray concludes.

Provided by Youris.com

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