

 **ROTTAPHARM** | **MADAUS**
using less to do more





ROTTAPHARM

MADAUS

using less to do more



How did we do it?



Rottapharm | Madaus

is a pharmaceutical manufacturing plant
based in Dublin, Ireland.



We have 150 employees.

In 2007 in order to win a bid for plant expansion we proposed the following improvements on-site:



Extend footprint of manufacturing facility by 33%

Double production outputs

Reduce energy cost per pack by 35%

Significantly reduce CO2 emissions

A fully paperless plant

All with minimal capital expenditure

By 2011 we had doubled production output of the plant while reducing energy costs per pack by 60%!

How did we do it?

Where to now?

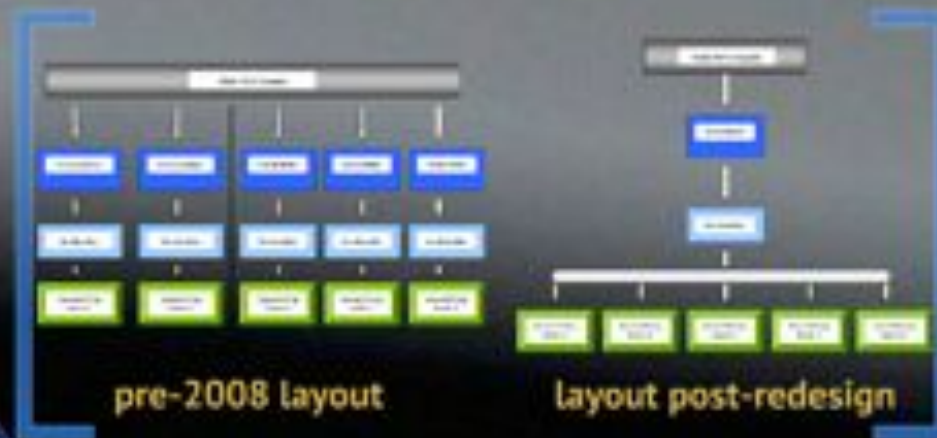




Localised dehumidification of sachet fillers



Redesigning our dehumidification system reduced our yearly energy cost by €39,900 and saves 626,000kWh pa.



Not only did we save €80,000 in capital costs but our powder flow has improved, helping increase sachet filler outputs.



9,900 and saves 626,000



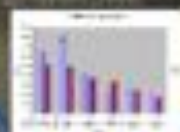
pre-2008 layout



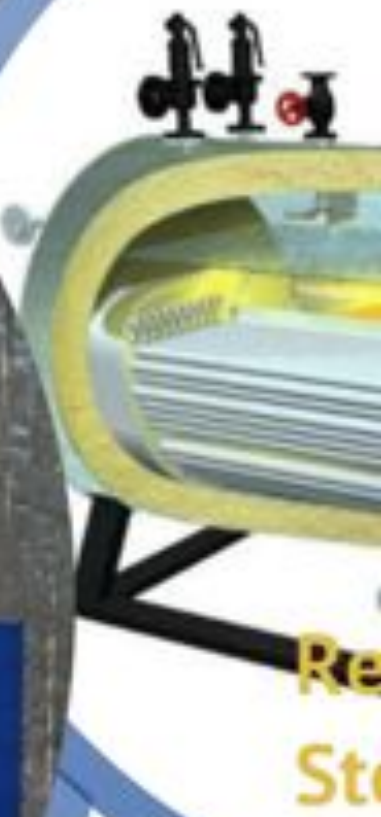
layout post-redesign

not only did we save €80,000 in cap
expenditure but our powder flow has improved

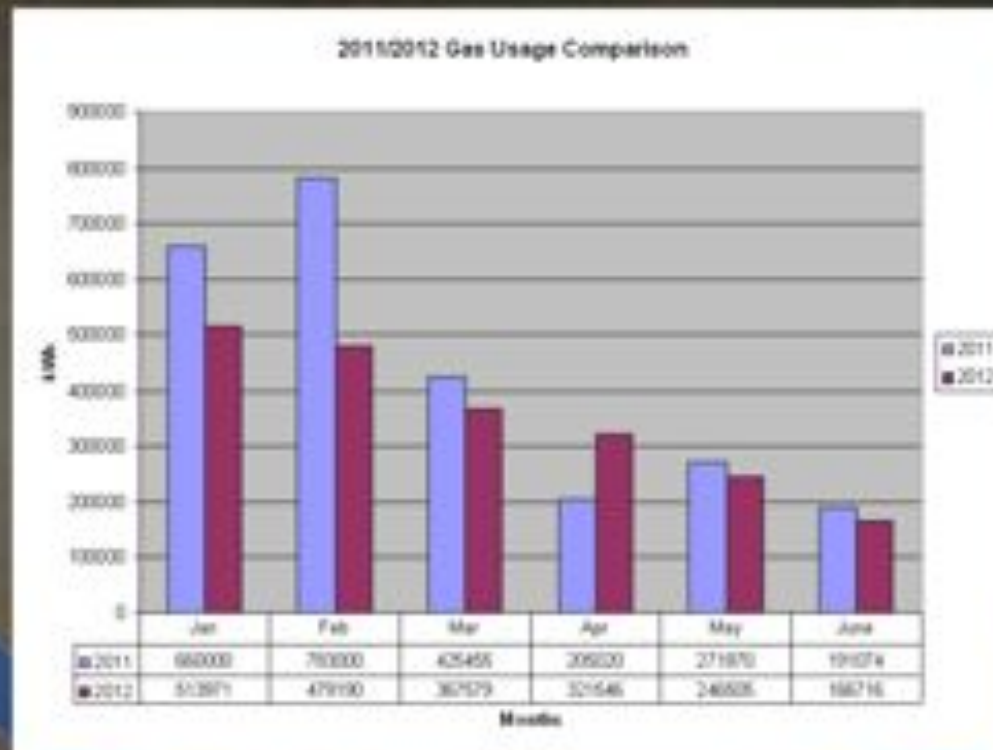
ification



Re-circulation of air and reduction in air changes.



By recirculating air we have saved 441,000 kWh on energy use & €33,000 energy costs in a 6 months period. This was completed with a capital investment of just €54,431.



*from January-June 2012 compared to the same period last year



**Redesign of Existing
Steam Boiler pipework.**

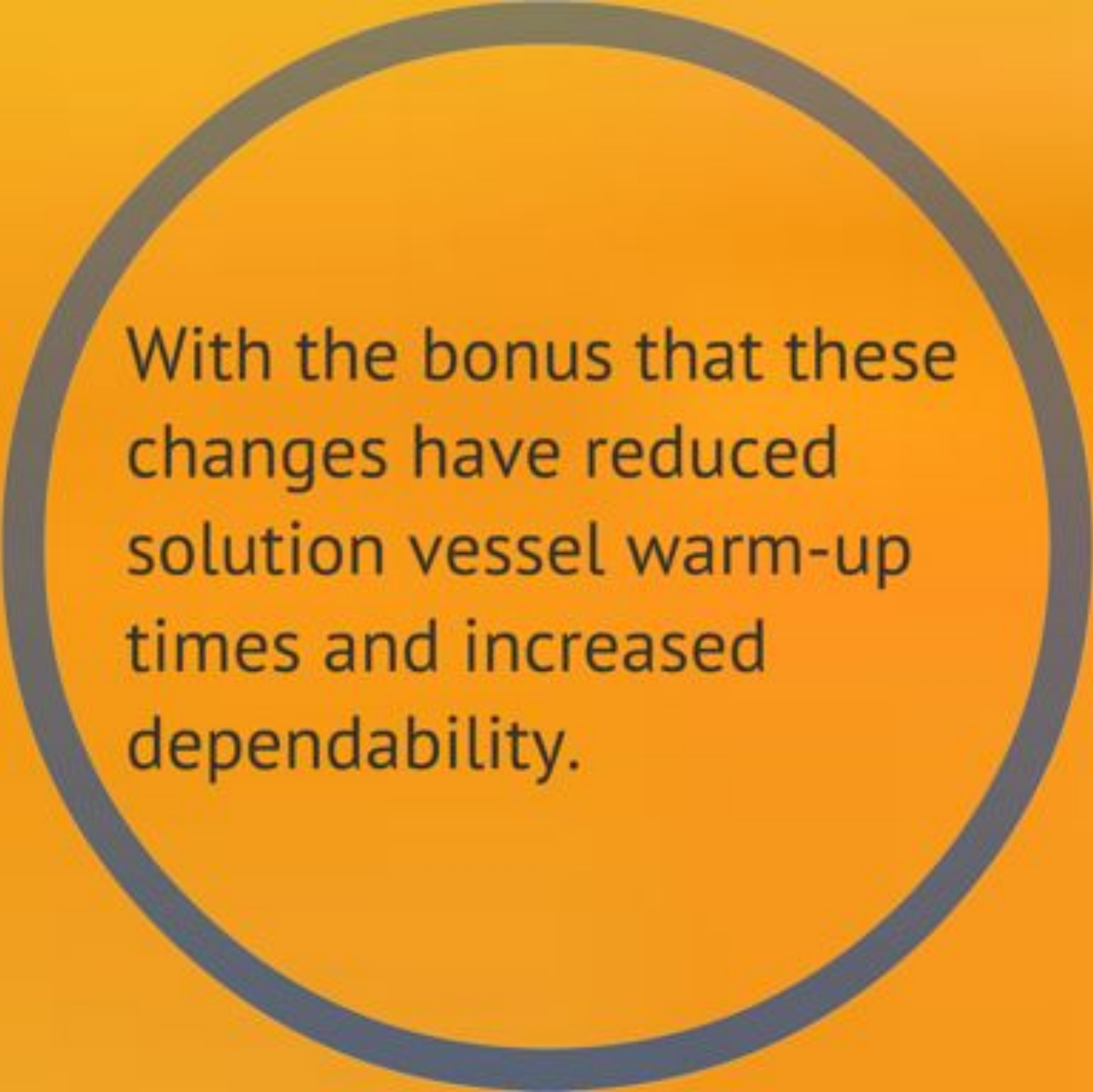
urn
r



In
Th

Re-engineering an existing steam boiler to use Medium Pressure Hot Water has provided a saving of 18200kWh per year. Our energy costs are now 20 times less per year for this piece of equipment.

With the bonus changes have n solution vessels times and incre dependability.




With the bonus that these changes have reduced solution vessel warm-up times and increased dependability.




Re-engineering
sustainable

Installation of a Thermal Oxidiser




99.99% reduction in our
yearly Mass Emission
and Destruction and
Removal Efficiency (DRE)



**Re-engineering
sustainability**

ion of a



We exercise a sustainable engineering approach with respect to maintenance and re-use of existing machines and parts.



Introdu
manufa
mainte

R&D Lab

Opened in 2012, our R&D lab researches sustainable replacements for our current raw materials.





Introduction of paperless manufacturing and paperless maintenance systems.


Red
and

Manufacturing: with the elimination of over 720,000 wet signatures we have decreased our batch release time by 58%.

Maintenance and parts stores: we have been able to reduce our inventory holding by 25% with 99% inventory accuracy.



**Reduction of plastic
and cardboard waste.**



From 2010 to 2012 we have reduced our waste quantities by 61%. This equates to a saving of €23,571 which will be re-invested in balers and waste equipment for further waste reduction.

Our number 1 asset.



The rate at which Rottapharm has changed over the last 5 years has only been achieved through the support of our staff.

This cultural shift hasn't been easy!

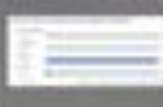
We've implemented



and our staff-driven program for change
"The Green Shoes Awards"



with the result that we have:



This cultural shift hasn't been easy!

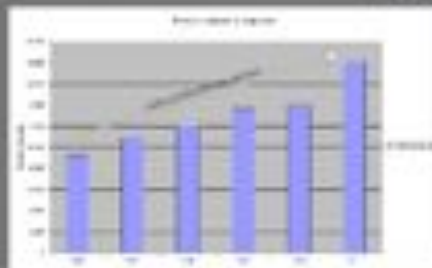
We've implemented



and our staff-driven program for change
"The Green Shoots Awards"



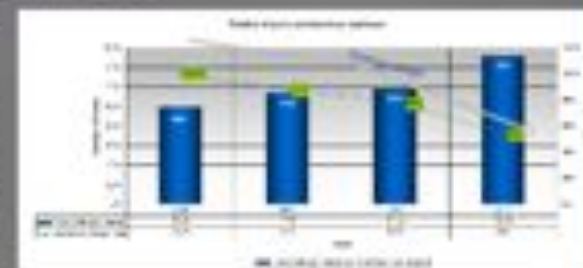
with the result that we have:



increased staff efficiency and output

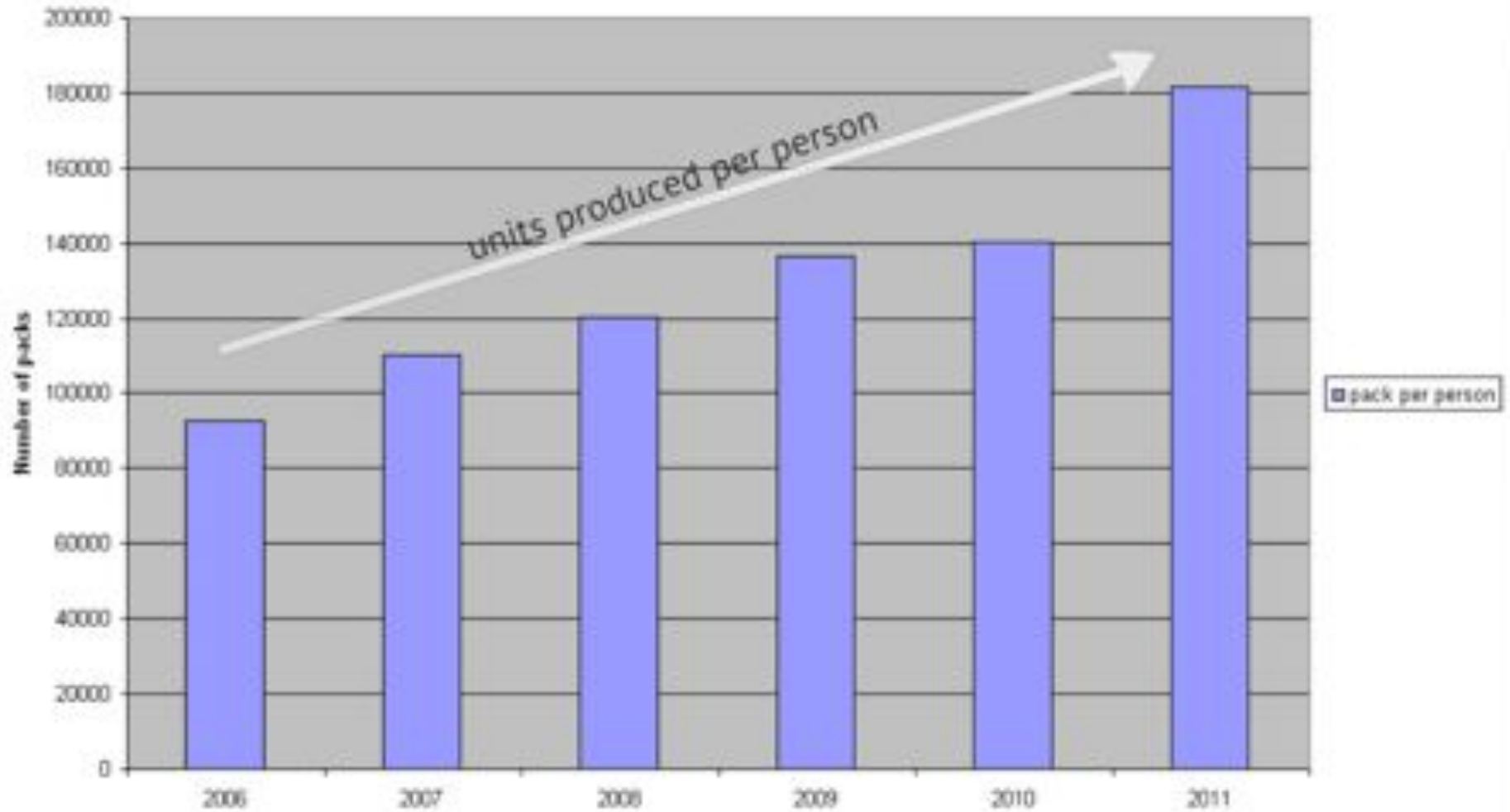


increased staff energy awareness



and significantly reduced the energy usage per book

Packs produced per employee



increased staff efficiencies and outputs

2. Who do you think is responsible for energy management at Rottapharm?

Senior Management

0 (0%)

Line Managers

0 (0%)

We all are

93 (99%)

Don't know

1 (1%)



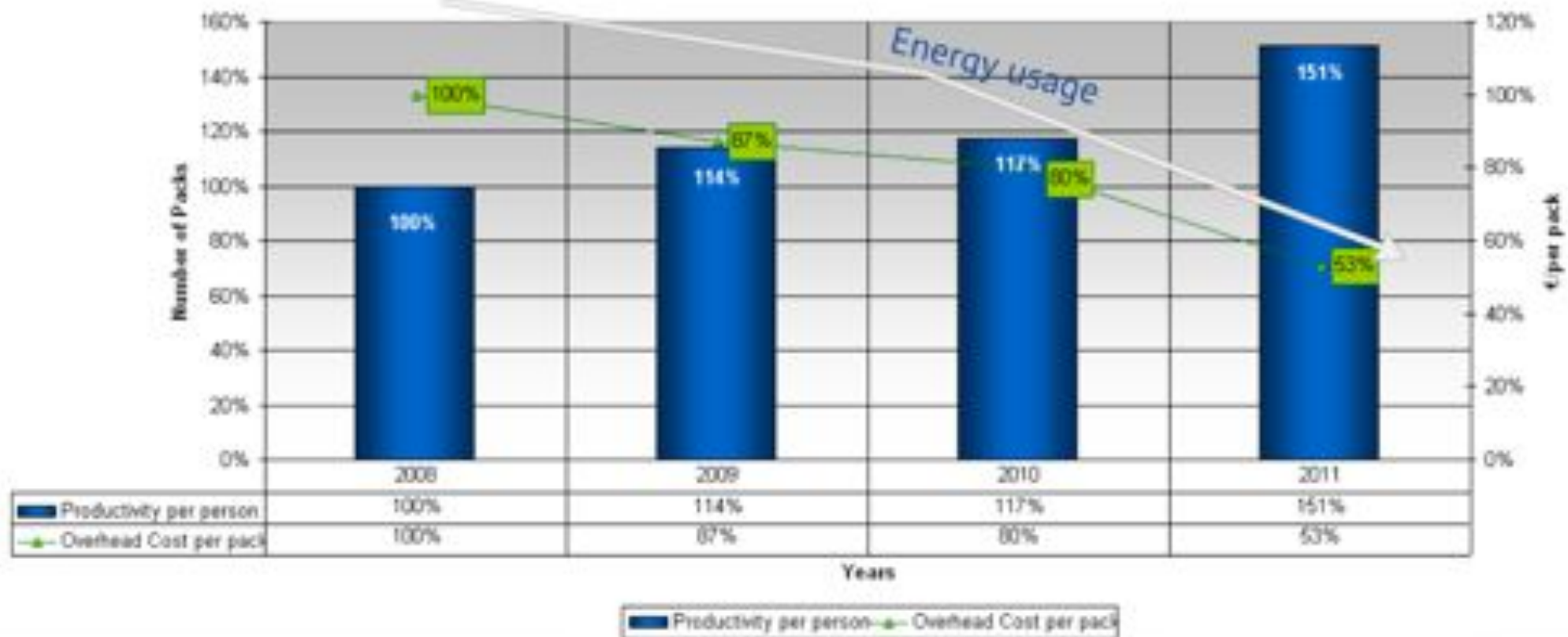
Total: 94

based on internal survey on energy attitudes, May 2012.

increased staff energy awareness

have:

Number of packs produced per employee



and significantly reduced the energy usage per pack

How did we do it?

Where to now?





Purchase of waste equipment such as compactors and continued focus on waste segregation



Continued implementation of the suggestions from the Green Shoots Campaign and launch and energy awareness campaign in 2014



Continue with sustainable manufacturing model for new expansion projects and optimize thermal oxidation process



Installation of integrated cleaning facility in manufacturing to compliment the current parts washer. It is envisaged that this will result in savings in water and energy

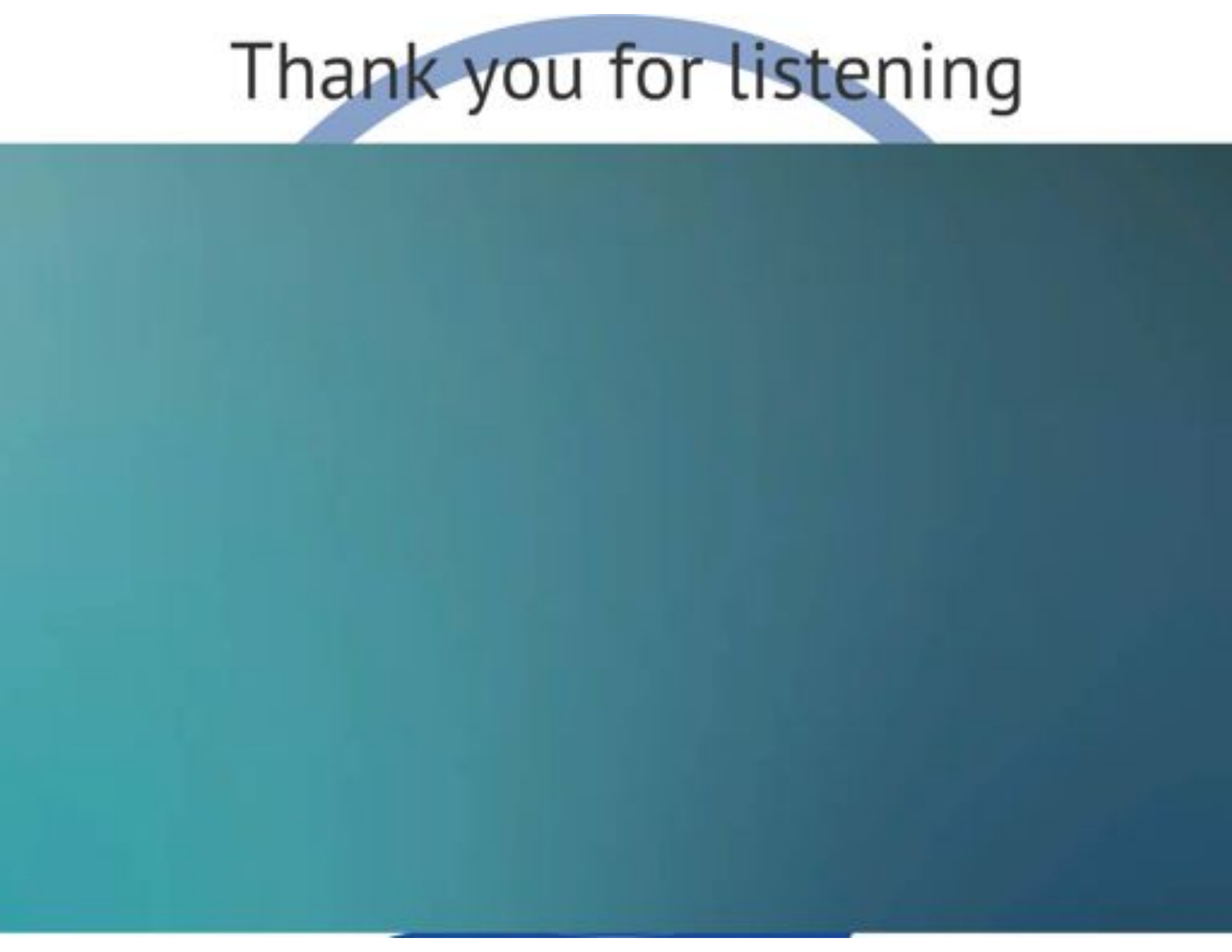


Install energy meters on key process equipment to optimize start up and shut down



To become a fully paperless manufacturing facility

Thank you for listening

The image features a blue gradient background that transitions from a lighter teal on the left to a darker blue on the right. At the top, a light blue arc is visible, partially overlapping the text. The text "Thank you for listening" is centered at the top in a black, sans-serif font.