



CRAIGS PRODUCTS

NI Pharmaceutical Company

YEARLY SAVINGS (GBP)

21,823

PAYBACK TIME (YRS)

1.81



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Executive Summary

YEARLY SAVINGS (GBP)

21,823

PAYBACK TIME (YRS)

1.81

ENERGY SAVINGS (kWh/YR)

181,855.71

EMISSION REDUCTION (CO₂ T/YR)

83.47

INVESTMENT COST (GBP)

42,312

We have now finished your Energy Check and it shows that you can save (GBP) 21,822.69 annually on energy expenses through some relatively straightforward improvements to your pump installations.

This savings estimate is based on our inspection of 8 pumps installed in your facilities. By investing in more energy efficient pumps and other small improvements, your organisation can reduce energy usage by 181,855.71 kWh per year. Your investment to realise these improvements is GBP 42,312.00, which translates to a payback time of 1.81 years. This report explains in more detail how you can achieve this.

Our recommendation is that the opportunities presented in this Energy Check Report be considered carefully. We are ready to help you every step of the way in achieving these savings, and look forward to helping you realise the additional operational, environmental and business benefits of these recommendations.

If I can be of any further help in explaining these findings to you or anyone else in your organisation, please don't hesitate to contact me.

Yours sincerely,

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Disclaimer

The potential savings shown in this Energy Check report are based upon a straight replacement without changes to the whole system and also the pump data gathered whilst on site comes from the pump/motor nameplates and/or the site engineer. Whilst every effort is made to present as accurate information as possible, Grundfos cannot be held responsible for findings in this report and delivery and services terms (effective 10/2013) also apply. This report is to be treated as confidential and therefore should not be passed onto any third party without the written permission from the local Grundfos office.



PUMP LIFE CYCLE COSTS

Why is your Energy Check so important

The Energy Check can help you find the hidden saving in your organisation. The purpose is to identify potential energy savings in your pump installation and help you understand how to save on your pump operating expenses.



How your Energy Check was conducted



International Organization for Standardization

The Energy Check has been conducted in accordance with the ISO 14414 Pump System Energy Assessment Standard and is a theoretical calculation with an accuracy of +/- 10% based on the following:

Key Data	Motor/pump nameplate	Supplied by customer
Pump head & flow	•	
Motor power data	•	
Operating hours/yr		•
Year of installation		•
Pump use		•
Operating needs		•

The table above shows the key information needed in order to carry out an Energy Check and where that information comes from whilst on site.

From this data set, we calculated the potential energy savings for each assessed pump. The Energy Check results are based on the criteria that nothing in the installed pump system will be changed except the pump set.



Breakdown of the potential savings

From the data collected during the Energy Check we have calculated the potential energy savings for each assessed pump. We then considered the price of purchasing newer, more energy efficient pumps, the annual operating cost with the new pumps and the related payback time.

For an investment of GBP 42,312.00 a potential energy savings of 181,855.71 kWh/yr can be achieved with a payback time of 1.81 years.

More details are shown below:

Energy Check results

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21,823

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1.81

ENERGY SAVINGS (KWH/YR)

181,855.71

INVESTMENT COST (GBP)

42,312

Pump data

Number of pumps assessed	8
Number of pumps with potential energy savings	8

Supplied data

Price per kWh (GBP)	0.12
Energy price increase yearly (%)	5.0
Expected target payback period (yrs)	0.00
CO ₂ rate (g/kWh)	459.0

Pump life cycle

Savings over 10 year period	245,895.56
Savings over 15 year period	452,135.31

Financial data

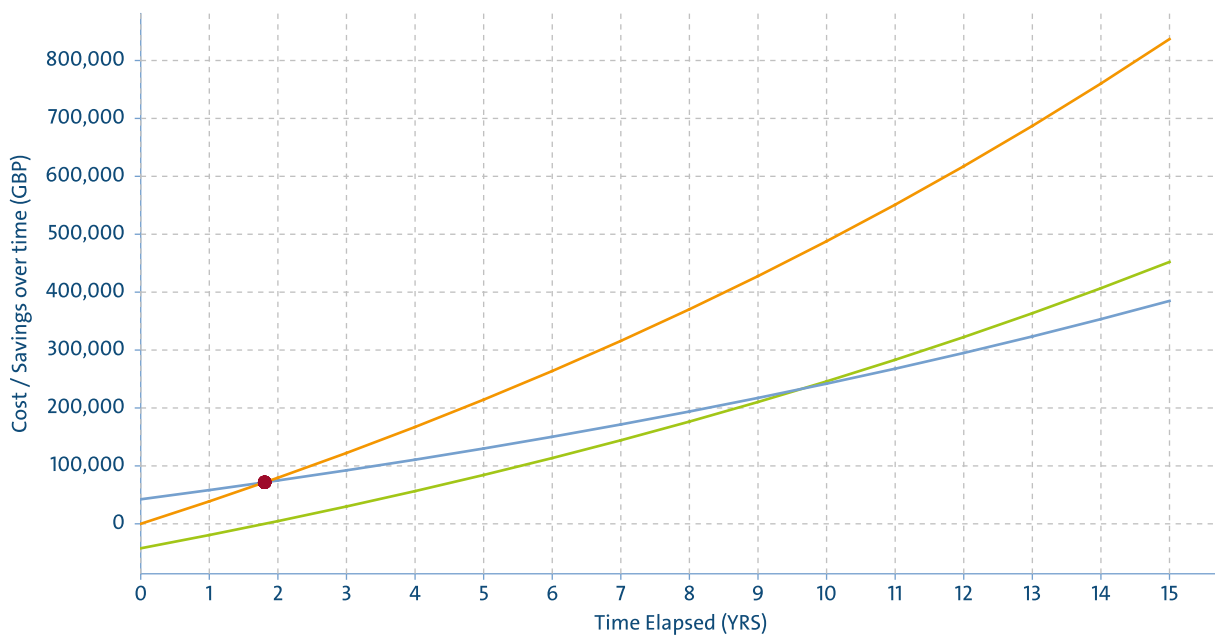
New pump equipment (GBP)	39,361.60
Installation/commissioning (GBP)	0.00
Accessories (GBP)	2,950.40
Service contract (GBP)	0.00
Total Investment (GBP)	42,312.00



95% of the life cycle cost of a pump is related to energy consumption, service and maintenance

The price of a new pump typically makes up just 5% of the total lifetime cost of operating it. Maintenance accounts for the next 10%, while the remaining 85% are expenses related to running the pump. Life cycle costs comprise of many contributing factors, however the energy consumption and maintenance are the most important factors to take into consideration.

The Energy Check provides a realistic picture of the total cost of ownership of a pump over time. Below is a comparison showing the existing pump systems costs against the new energy efficient Grundfos pump systems over a 15 year period.



- Existing system
- New system
- Savings
- The start of your savings

Savings Opportunity with the new system

Initial Investment (GBP)	42,312.00
Savings after 10 years (GBP)	245,895.56
Savings after 15 years (GBP)	452,135.31



OPERATIONAL BENEFITS

- Reliable Operation
- Low failure rates
- Reduced down time
- Reduced repair costs
- Complete overview of pump installations



ENVIRONMENTAL BENEFITS

- Reduction in your CO₂ emissions
- Greener corporate image
- Pump life-cycle analysis and documentation
- Compliance with energy regulations

EMISSION REDUCTION (CO₂ T/YR)

83.47

Benefits beyond the balance sheet

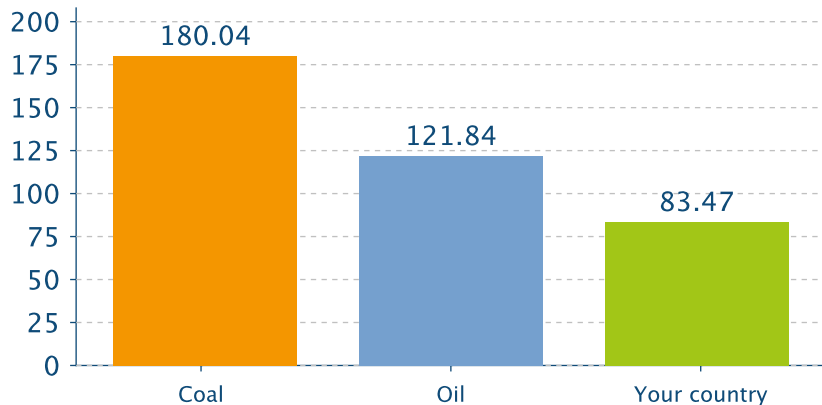
The Energy Check gives a better understanding of how reducing energy consumption in your pumps translates to reduced operating expenses with a short return on investment timeframe.

Upgrading pumps can have other operational, environmental and business benefits as well.

Deciding to invest in greener and more energy efficient pump solutions will boost your environmental profile and bring down carbon emissions. It will also help your organisation to comply with the latest energy saving regulations.

Environmental Impact

In accordance with the latest International Energy Agency (IEA) data source on CO₂ emissions, the chart below shows the annual CO₂ savings generated by the new Grundfos energy efficient pumps. A comparison is then made against Coal, Oil and local electricity consumption.



The energy saving potential for your pumps can be seen on the following page.



Detailed results

NUMBER OF PUMPS ASSESSED

8

NUMBER OF PUMPS WITH POTENTIAL SAVINGS

8

ENERGY SAVINGS (kWh/YR)

181,855.71

Chilled Water

Tag	Brand	Product name	Quantity	Flow (m3/h)	Head (m)	Operation hours/yr	Potential savings (kWh/yr)	Grundfos replacement
Chilled Water 1	GRUNDFOS	NP 100-80-160/152	2	80.00	28.00	4300	65,339.76	NBE 80-200/171 A-F2-A-BAQE
Heating 1	GRUNDFOS	NP 100-80-125/130	2	80.00	16.90	4320	39,524.69	NBE 65-125/127 A-F2-A-BAQE
Heating 2	GRUNDFOS	NM80-50-200/202	2	26.00	12.50	4320	11,651.49	NBE 40-125/105 A-F2-A-BAQE
Chilled Water 2	GRUNDFOS	NP 100-80-160/152	2	80.00	28.00	4300	65,339.76	NBE 80-200/171 A-F2-A-BAQE



Conclusions and our recommendations

Client

The start of your energy saving journey!

With this Energy Check Report, we assessed a total of 8 pumps onsite, 8 of which have been identified as having potential energy saving opportunities

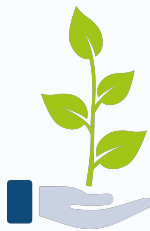


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There is money to be saved in your pumps

Our analysis found that you can save **(GBP)21,823** in annual operating expense by making an up-front investment of **(GBP)42,312.00** in new pumps. After just **1.81** years, this investment will have paid for itself and the improved efficiency of the new pumps will continue to generate both energy and economic savings.

Ninety-five per cent of the life cycle cost of a pump is related to energy consumption and to service and maintenance. The implications of this fact should not be overshadowed by the cost of investing in the most efficient pumps available. The potential for longer-term savings is substantial.

