



Client Case Study

Beond helped Pinguin Foods to increase their revenue from demand management by more than twenty times

Our Client

Pinguin is a market leader in processing freshly harvested vegetables and fruit into fresh frozen products for retail and foodservice. Beond provide energy consultancy services for Pinguin's UK based operations at their two sites: one in King's Lynn and the other in Boston.

Our Challenge

Pinguin have been a client of Beond since 2014; from April 15 they moved onto a Flexible purchasing contract where all non-energy costs are passed through to the customer at cost.

Pinguin were already part of the STOR (Short Term Operating Reserve) contract in which they received payments for reducing demand within a 20 minute warning. However Pinguin were not satisfied with the benefit of this scheme as they were only receiving £6,000 per annum from it.

Pinguin's supply contract allowed them to receive direct financial benefit from adjusting their intra-day consumption profile and Beond were able to advise Pinguin how to maximise this opportunity. As Pinguin specialise in frozen foods, a significant proportion of their electricity consumption comes from large cold stores.



Beond

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**Pushing the
boundaries in
energy design**

This means that Penguin are ideally suited for demand management as they are able to reduce their consumption during certain periods of the day without materially affecting production or the temperature of their cold stores.

Our Approach

Step One

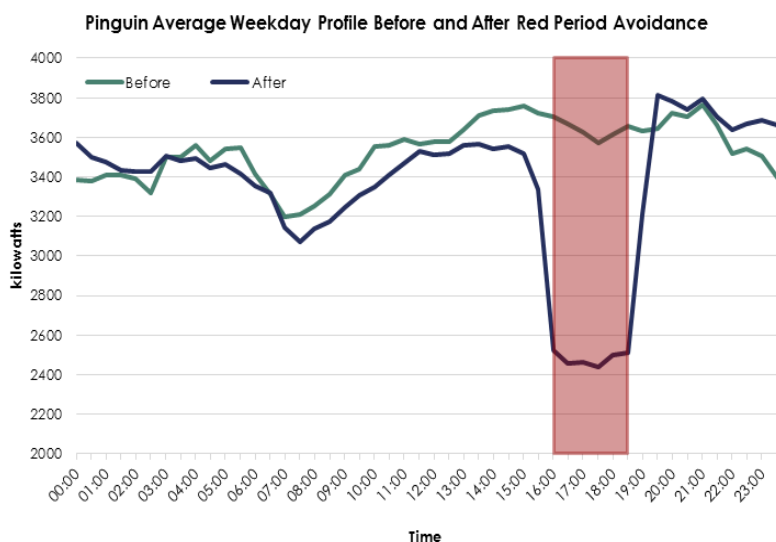
Beond identified 'red distribution period avoidance' as the most cost effective form of demand management, as well as having the added benefit of being very simple to implement. This involves dropping or shifting load between 4-7pm on weekdays (Red Distribution Period). Large savings can be achieved by doing this as distribution costs during this three hour window are around 250x more expensive than outside the window. On top of this, additional savings can be achieved from the Transmission costs. The Transmission costs are based on the customer's average usage between the three 'Triad' periods (half hour periods between November and February with the highest national consumption). Historically the Triads have always occurred between 4-7pm on weekdays, therefore if the customer is reducing their consumption during this period to reduce distribution costs; by definition they will also save money on the transmission costs.

Step Two

Beond undertook further work to see if there are any other demand management opportunities that Penguin could profit from outside of the 4-7pm timeband. Beond recommended taking part in Firm Frequency Response through an aggregator. Firm Frequency response is a service required to maintain the second by second balance of supply and demand on the grid to ensure that the grid frequency remains at 50Hz.

The Results

- Penguin dropped their consumption between 4-7pm on weekdays as can be seen in the graph below and saved £87,906 per annum with equal benefits from distribution and transmission savings.



About Beond

With over **500** major energy consumers under our management we have an excellent track record in delivering measurable success.

£87,906

Per-annum saving through bespoke demand management project

£37,500

Additional per-annum benefit forecast from Frequency Response

100%

Market coverage, ensuring all schemes and technology can be evaluated

15

Years experience, advising our clients on demand management opportunities

25%

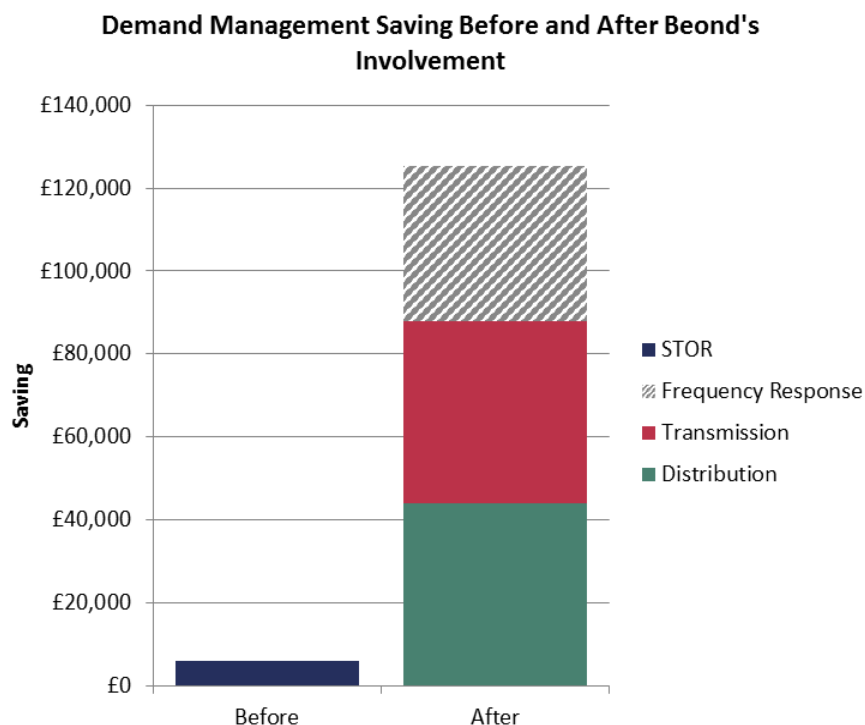
Average cost reduction through demand management strategy across clients

15%

Average potential energy savings identified from ESOS energy audits

- Although this project has not been fully implemented yet, Penguin should be able to receive an additional benefit of £37,500 per annum from Frequency Response.

The following chart shows how these benefits compare with the revenue before Beond's project commenced.



“Energy use is an area of constant focus for Penguin. Electricity represents a significant cost in our processes and cold storage facilities. With taxes alone set to rise significantly this year and on-going, we are faced with having to find significant savings to offset the increase as far as possible. Fortunately Beond are proactive and came to us with possible cost savings options before we asked the question of them. Through Firm Frequency Response and also changes to the management and control of the timing of electricity use in our cold stores, two very different approaches, we are able to realise savings that do indeed make a significant contribution to offsetting the unavoidable tax increases.”

Arjan Buschman – Finance Director