



# AN ELECTRICITY GENERATION AND DISTRIBUTION COMPANY

A  
Case  
Study  
by

**MCGRATH** 

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### Introduction

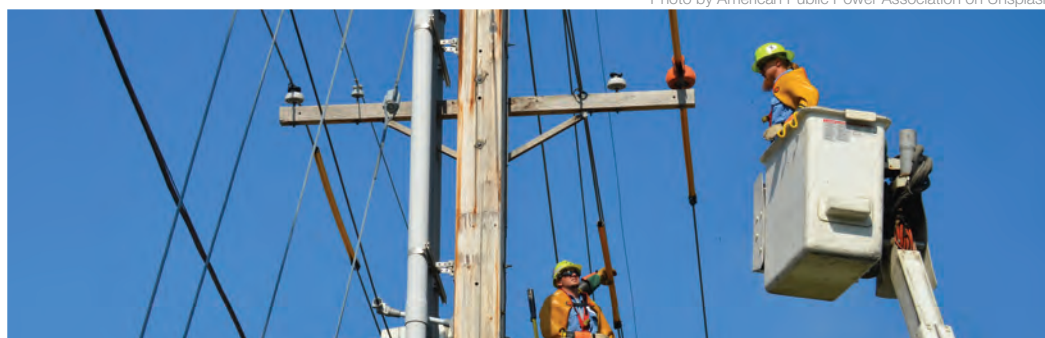
- Industry: production and distribution of electricity + distribution of gas.
- Main products: electricity & gas.
- Type of company: private mainly, quoted in stock exchange.
- Locations: Southern Europe.
- Turnover: 12,200,000,000€ (2009).
- EBITDA: 16%.
- Number of employees: 12,100 (2009).
- Duration: 75 weeks (over a span of 2 years).
- Return on investment: 10,7:1.

### Problem Statement

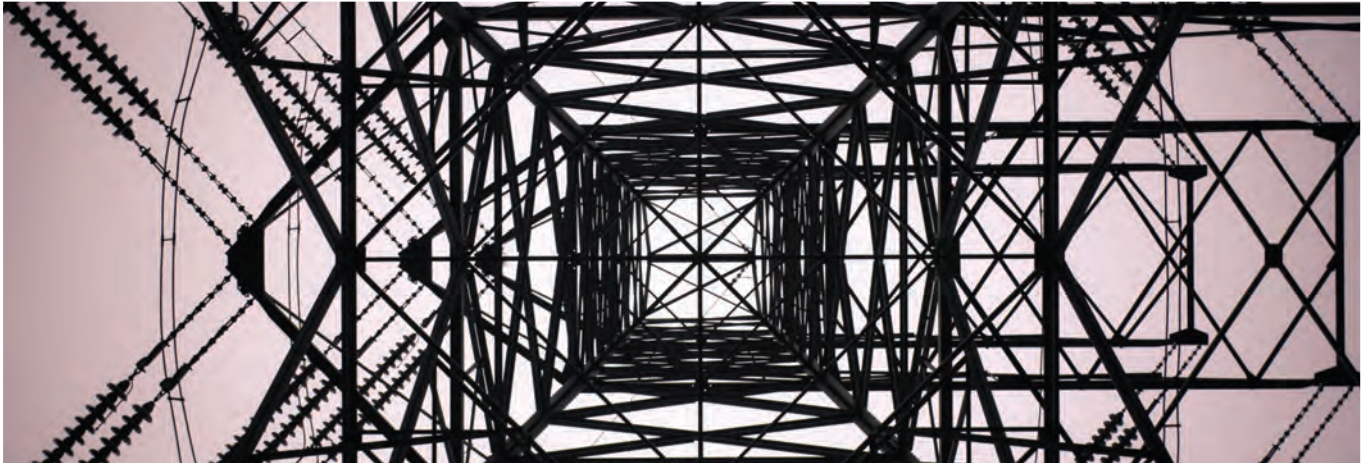
**1.** Raw material stock levels were very high. Stock management was not focused on real needs and not cost oriented. Conservative high stock culture was justified for safety reasons. There was poor warehouse management. The improvement points were: control system parallel to SAP, parameters of management of inventories were not defined and needed pinpointing, there was high subjectivity and manual configuration, there was the lack of an authorisation system to regularise exceptions and a lack of procedures. Areas of action were: to review and redefine out of control parameters of inventory levels and to authorise levels for exceptions, to define key indicators and logistic report design.

**2.** Several warehouses were not optimised. Opportunity: rationalisation of the central warehouses in the medium term. The improvement points were to create functional warehouses for the current operation, with changes made to the transport system, a reduction of inventories and an effective management system. With these changes in place it would become possible to reduce the number of central warehouses. The area of operation: implementation of a warehouse management system and inventory control; study and program for logistical centralisation.

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**3.** There was a high current transport cost throughout the entire distribution process. Transport flows were not optimised which had a relevant negative impact at cost level. The control of outsourcing and the optimisation of transport would be necessary, an improvement in the use of transport, promotion of direct shipments, reduction of km and prices per km was also necessary. There was a potential for direct deliveries between suppliers and warehouses of the service providers. This potential was associated with specific families of materials. The service providers did not have the capacity to optimise transport. There was potential to reduce stock in the central warehouses whilst maintaining the level of service. It was also possible to reorganise and improve the company's supply chain towards providing all supply chain (RFP) operations to outsourcing. Improvement of inventory forecasting, planning and control systems would be required as well as quantifying the reduction in stocks. Training service providers and implementing procedures would need to be carried out as well as setting a target reduction of real estate used in storage.

**4.** Reduction of purchase volumes and the risk of obsolescence. Improvement points: 5% policy in excess of the needs of the work without a system that ensured its later use. Areas of action: identification of the appropriate organisation; procedure to ensure the correct use of purchase decisions. To combine the needs of the different companies of the group in order to optimise activities and impact in prices reduction.

**5.** Attitude. All these changes in systems, procedures and methodologies required intense work on behavioural aspects. It was necessary to bring the directors and managers of the areas in question to collaborate in the change process. It was necessary to reach an agreement with them regarding methodological and procedural changes. This in turn would create a sense of ownership on their part and help them feel in control of the new systems, procedures and methodologies.

In general, the observed attitudes were not oriented to productivity and optimisation. Therefore, the greater part of the work was directed towards cultural change, optimisation and high performance.

## Objectives

- 1.** To optimise current inventory levels of all involved companies towards a correct stock parameters implementation, giving a better balanced stock volume, drastically reducing working capital and operational costs related to warehouse space utilisation.
- 2.** To rationalise existing warehouses according to real needed surfaces, also combining and matching strategies from different companies of the group.
- 3.** To improve the current transport organisation model with a substantial reduction of freight costs.
- 4.** To install a new model for materials purchases, implementing criteria not yet used and transforming the current approach.
- 5.** To design and implement a KPI's score card for all involved companies of the group, with all the most relevant management variables.

## McGrath Solution

In order to optimise the current inventory levels in all companies of the group, *McGrath* moved according to the following sequence of steps: define inventory categories according to two main criteria: logistic complexity and criticality level; agree and validate the defined categories with the entire work team; carry out ABC analysis of existing references to prioritise work; sort the references in the categories previously defined; identify excess stock in each category (prioritise categories of 'obsolete', 'no moves' and 'stock zero'); establish stock parameters to be implemented (basically reorder point, safety stock, minimum order quantity); define improvement actions for each of the defined categories; prepare the implementation plan (action, responsible, deadline, status); implementation of actions and follow-up.

The rationalisation of warehouses has been achieved by implementing the following actions: option to merge warehouses utilisation from different companies into the group; reducing/minimising material stock levels placed in a ware

house in order to minimise needed surface and having the opportunity to sell it or, eventually, stop paying rent rate; getting a better rent price or finding a new warehouse; share warehouse utilisation with other companies in order to reduce rent cost; and also looking for other existing alternative management chances.

This rationalisation relevantly impacted operational costs with an important effect on EBITDA for some companies of the group.

Transport costs were drastically improved, the concept used in the past was completely modified.

*McGrath* analysed the current situation, defined a new transport model identifying the potential improvements and implemented the necessary changes. Improvements came from three different aspects: 1) Implementation of 'direct deliveries transport,' from materials suppliers to final contractor, avoiding the stocking of materials into a central warehouse, as previously done (positive impact achieved reducing transport fee and average distance in km); 2) Transport improvement from materials suppliers to central warehouse, using different logistic operator; 3) Transport improvement from central warehouse to final contractor, changing logistic operator and combining trips with 'milk runs.' This methodology was implemented in several companies where, after data analysis, very important opportunities for improvement were shown. In other cases analysis did not show any relevant achievement, so accordingly to this, existing transport organisation remained the same.

The companies involved in this program were asked to send the details of the purchases of materials related to the current year in order to be able to estimate, in a more scientific way, the potential reduction of the material acquisition costs. A first sampling was carried out among priority families of materials common to companies, in order to identify the following improvement potential: 1) The possibility

of placing the tender sets of material families with larger values in Euros. 2) The possibility of reduction and/or concentration of the current number of suppliers of the same material/family of material. The following steps went through to pass the results of this analysis to the central purchasing division and allow its renegotiation. Thereafter it was decided to extend this type of analysis to other geographies. Moreover, for the majority of the companies in the group, a new model of 'materials local purchase' was structured and implemented, in order to separate high value purchases from the low value ones (with high administrative processing) to achieve greater compliance with delivery times and greater control of stocks. More implementation time was required due to the complexity of the current internal reorganisation phase of HC. A first analysis was made to identify the families of materials that could be managed by the future team (according to the segmentation agreed for the new local purchases model). The first conclusions pointed that there were about 320 families of materials that would be subject to having negotiated future framework agreements; crossing this information with data on turnover rate and annual purchasing figures, about 66 families of materials were identified that may represent the priority of team work in the first phase of implementing the new model (negotiate framework contracts); the remaining families of materials would be worked on in a second phase, according to the development of the previous point.

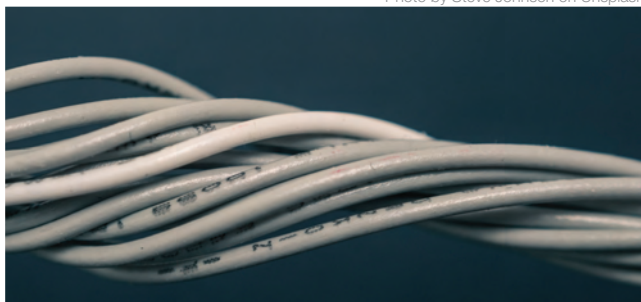
The processing times of the orders of the material families with framework contracts significantly reduced the current administrative processing times, with a consequent positive impact on the workload.

The requirement to create a common KPI group was due to the importance of allowing a systematic follow-up of key variables in each area and standardising reporting. A KPI's scheme was implemented for the entire group and one for each company within the group.

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## Benefits Achieved

### Benefit 1: Stock Optimisation & Working Capital Reduction

All implemented changes in inventory optimisation gave the following positive results: a stock reduction in all the companies of the group, from 20% up to 35% of the previous stock value, if compared to starting scenarios.

### Benefit 2: Warehouses Rationalisation & Operational Cost Decrease

With all agreed actions that were implemented in order to rationalise existing warehouses, the following results were achieved: 1) Six warehouses were closed and a monthly rate was no longer paid; 2) Three warehouses were merged with a saving of 1,5 warehouse monthly rate cost; 3) In addition two warehouses utilised surface was reduced due to stock level reduction done previously.

### Benefit 3: Transport Reorganisation Model & Freight Cost Reduction

The real impact, in the first six months of operation of the 'direct delivery' model can be summarised as follows:

1) Transport supplier - contractor ('direct delivery'), a reduction of 38% transport cost. This reduction is associated to the mix of the following variables: transport task reduction + reduction of the average distance in km between supplier and contractor.

In addition, there is a positive impact on 'incoming' shipments, due to the reduction of transport costs;

2) Transport from supplier - incoming warehouses: 18% reduction in transportation costs. In summary, although the volumes of materials / pallets sent are of little relevance, the gains so far in % are very relevant. It is important at this point to extend the implementation to other families.

3) Transport from central warehouse - contractor: 15% reduction in transportation costs.

### Benefit 4: Purchasing Optimisation & Materials Cost Decrease

After having implemented all agreed changes, in the two main companies of the group, the achieved savings were around 500K€. Regarding the other remaining companies, based on the total annual purchase value of 87M€, through the existing synergies between groupings of materials and suppliers, the average impact of potential savings in reducing costs of acquisition of materials was 650K€. In conclusion the total amount of savings in material cost decrease has been equal to 1,15M€.

## Summary

The implementation of a new concept of logistic and materials management, completely transformed operations within the group. *McGrath's* approach clearly passed on a new way to plan, organise, execute and control all the most relevant activities, focusing at the same time on efficiency improvement and operational and financial costs reduction. This program strongly impacted energy market competitiveness, reinforcing peoples' involvement and motivation.

The board of directors and top management were so deeply enthusiastic with *McGrath's* program and its achieved results that they decided to extend, with the adequate adaptations, the implementation to other remaining companies of the group, mainly located in South America, and also to the other business units present around Europe.

## Return on Investment

A 10,7:1 Return on investment was achieved on quantified financial savings that impacted the P&L statement. Savings evaluation agreed and signed by the executive board of directors. Additionally the *McGrath* Program freed around three million Euros to the cash flow, dramatically reducing existing working capital and improving as a consequence the liquidity of the company.

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