Capgemini Consulting

“Don’t have time, month-end closing!“ – Vicious Cycle and No Way Out?

Optimized monthly closing in the energy sector

Today, “Sorry, no time, month-end closing, please try again at the end of the month“ or “Unfortunately, we can’t yet say what the results look like, we need to book once more“ are statements frequently made by many back-office and finance departments of utility companies.

This is due to the often invoice-based approach many companies use to determine their financial results, i.e. financial reporting is based on the invoices created and booked upstream. In addition, the data volumes to be handled increase massively, in parts a direct consequence of the new energy policy, e.g. an increasingly fragmented and distributed generation. But also due to a significant increase in the volume and complexity of business transactions. In many cases, this leads to an over-burdening of employees at the start of the month and causes delays in financial reporting.

All the same, management teams expect to receive solid monthly figures as soon as possible to maintain an overview in times of dramatic changes in the utilities industry, lower returns and unpredictable market volatility. Many companies hence use shadow accounting to quickly determine the results, though that means they need to conduct laborious reconciliations during their closing to safeguard quality. In turn, doubling the working hours of employees during closing and calling this “fast close“[1] doesn’t exactly work wonders in terms of motivation and, in addition, often fails to deliver the desired acceleration.

A pragmatic way of escaping this dilemma consists in decoupling the settlement process from the calculation and reporting of results. Instead of waiting for AR and AP (AR/ AP self-explaining?) invoices, high-quality forecasts and estimates are used as accruals. In recent months, Capgemini Consulting has successfully implemented this approach with several clients. This article will illustrate the reasons for introducing a forecast-based month-end closing and identify the necessary requirements as well as related benefits and implications.

Current challenges of monthly reporting in the energy sector

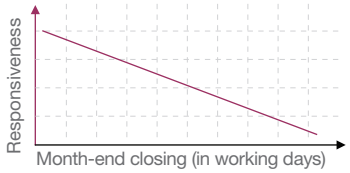
Of course, one could meet any discussion about closing processes and timelines with a simple “why bother?“. After all, we’re only talking about creating a report. In practise, however, our experience suggests that many companies from the energy sector are currently looking into this matter. In essence, three key challenges need to be addressed that can have an indirect yet significant influence on the success of a company:

- Higher demand for information by management, especially in terms of the timely availability of monthly financial figures
- Increasing number and complexity of transactions to be processed
- Uneven distribution of employees’ utilisation with extreme peaks

[1] Procedures and methods used to accelerate the closing process are called “fast close“. Fast close focuses on accelerating individual tasks and shortening the preparation period. Three main principles apply: shift data collection to times long before the closing deadline, accelerate information channels and decision processes in operations, and simplify the accounting and valuation methods.

a) Higher demand for information by management

The energy market is undergoing a transformation due to new energy policies and the financial crisis – unprofitable power plants, decreasing margins and low prices translate into eroding results, and ever more stringent regulation curtails entrepreneurial latitude. Despite this rather difficult environment, companies are still expected to deliver stable, predictable and even improving results. Management teams require monthly financial figures as soon as possible as a basis for management decisions and to prepare an adequate communication to shareholders and financial markets. No surprise really that management is getting nervous even over the smallest delays.



Classic levers to boost the speed of information are:

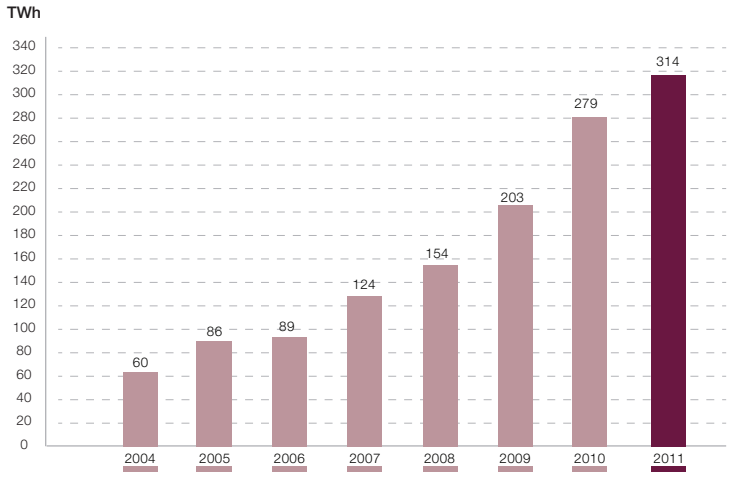
- Optimising and streamlining the workflows in settlement and closing processes
- Accelerating the processing times, especially during quarterly and annual closing (fast close)
- Conducting shadow calculations and ad-hoc analyses in controlling to forecast the result

These measures may potentially lead to shorter closing timelines and an earlier provision of information, yet certainly to a higher workload of the affected employees during closing, an increase in complexity and the number of errors requiring corrections as well as laborious reconciliations to safeguard the quality of results.

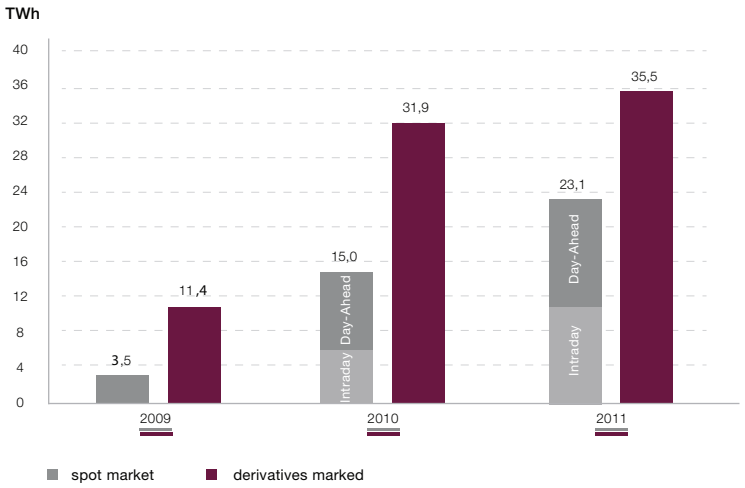
b) Increasing number and complexity of transactions

The management measures described in the above chapter should cause even more tasks to be processed at the beginning of the month by settlement and reporting units (especially back-office and finance), thereby adding to an immense time and quality pressure. In addition, the transactional volumes in the energy market have seen a massive growth in recent years. This is due to a general market growth especially in electricity spot trading and gas (see EEX development in figure 1) driven by an increasing number of market players, but also caused by growing transaction volumes of most energy companies in turnover and procurement.

Figure 1: Development of trading volumes in the electricity spot market and gas futures/spot market of EEX until 2011 (EEX company brochure 2012)



since 2009 trading volume incl. market area France



At the same time there is a boost in the number of tradable products, which mainly become more granular[2] to cover existing gaps in the market (e.g. between electricity spot and futures market) and help meet the individual requirements of the market players. In turn, this means that even at steady trading volumes of the individual players significantly more transactions are processed. All this, of course, has to be handled within unchanged or even shorter closing cycles.

The multitude of new and often small market players (e.g. EEG feeders) adds yet more complexity to the handling process. Ever more often processing companies face semi-professional structures at their partners' side, and triangular relationships and declarations of assignment with the financing banks are common practise, especially in the renewable energies sector. The individual handling process thereby becomes more complex and requires more time.

c) Uneven distribution of employees' utilisation

The third reason is, although the most obvious, often ignored by companies or regarded as negligible. The above developments translate into an increasing workload of the affected employees at the beginning of the month. Unfortunately, this brings about a number of undesired side effects in companies:

- **Accumulation of overtime:** Massive overtime is accumulated during the peak times of closings, which are not adequately reduced during times of lower workloads. Over time, this leads to a growing demand for employees and additional costs for the companies.
- **Higher error rate and lower data quality:** If a company doesn't have fully automated handling processes, which isn't always possible in the complex energy business, error rates in processing and closing will increase disproportionally, be it because of the higher number of transactions or due to the higher time pressure and thus effectively shorter processing time per transaction. The information as such may be available earlier, but because of the lower data quality its significance could be dramatically marred.
- **Decreasing employee motivation:** Most often the affected employees cannot expect to receive any praise, and also the self-assessment of work quality drops to ever lower levels. More work, more errors and more frequent corrections easily end in a sustained slump in employee motivation.
- **Boredom after the peak:** Once a month-end closing is done, employees might take a timeout or even feel bored. As employee numbers have been continuously enhanced to cope with peak workloads, there simply isn't enough work for all those people once the closing process is finished. On a monthly average the productivity of employees and of the department falls significantly below the productivity at a more constant utilisation.

[2] This refers to the extension to all relevant commodities (e.g. EEX: electricity, gas, coal, certificates [EUA, CER, ERU]), but also to the diversification of products, see press release of EEX from 22 November2012 about the introduction of financial day/ weekend futures ("EEX launches Phelix Day Futures").

- **Higher attrition:** The above aspects may even cause employees to leave the company. A high rate of attrition is hence a strong indicator for an imbalance between work profile, workload and motivation. Unfortunately, in the long-term this also affects a decrease in productivity of departments and the company at large, as leaving employees always also mean a brain-drain. Lost knowledge then needs to be redeveloped, which in turn ties the capacities of experienced employees.

These frequently neglected side effects eventually cause considerable additional efforts and hence higher personnel costs for the companies.

Options for addressing the challenges – forecast-based month-end closing

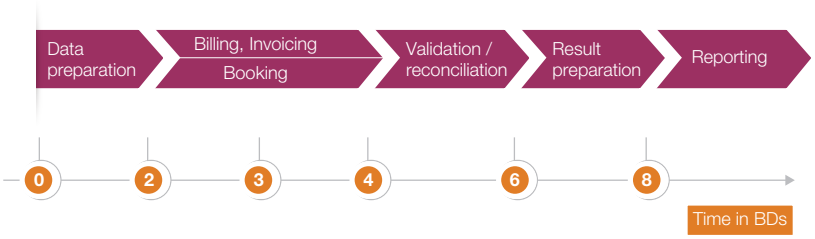
To reflect an accurate picture of a company's financial and earnings position, most energy traders continue to include as many invoices as possible in their current closing. Incoming and outgoing invoices form the basis for month-end closing in these **invoice-based closing procedures**. Estimates, for example for missing incoming invoices, are usually only conducted and included in the result in exceptional cases. Table 1 compares the various designs of invoice-based closing.

Table 1: Variations and designs of invoice-based month-end closing

Model	Design	Accruals	Disadvantages
Fully invoice-based model	Month-end closing exclusively based on invoices (official documents)	In exceptional cases	• The duration/ quality of closing depends on internal preliminary work (billing) • The duration of closing depends on external data supplies • The quality of closing depends on external invoice quality
Point-in-time model	Invoices are considered up to and including a specific point in time; any remaining business transactions are accrued	From a specific point in time	• The quality of closing depends on internal preliminary work (billing) • Higher effort to check for completeness • The quality of closing depends on external invoice quality
Hybrid models	Example: All outgoing invoices are captured; incoming invoices are accrued	Specific business transactions (e.g. outgoing invoices)	• The duration/ quality of closing depends on internal preliminary work (billing) • Different data qualities of the business transaction groups (potentially no netting options)

However, all of these variations share a key disadvantage, namely the coupling of the financial reporting to the settlement process (duration and quality, see figure 2). In addition, the quality of closing often depends on company external data sources.[3]

Figure 2: Traditional month-end closing process – dependency on settlement and reporting processes



Forecast-based month-end closing represents a true alternative. Its primary principle is to shift and structure the data acquisition and the continuous quality assurance of delivered data outside the closing and reporting processes.

Second and centrally, the process dependency between handling and settlement as well as reporting is removed. Instead, the process is integrated in a consistent concept tailored to the specific requirements of the company.

The third (implicit) principle formulates the independence of reporting from external sources. Table 2 shows an overview of the principles of forecast-based month-end closing.

Table 2: Principles of forecast-based month-end closing

Principle	Design
Shift and structuring of data acquisition	• Closing is partially or fully based on forecasted data • Data is available in a defined company-specific format that can later be translated into a different format for invoice booking • The base data is quality assured
Process independence between transactional handling/ settlement and reporting	• All data to be captured in moth-end closing are accrued at initial entry
Independence of reporting from external sources	• All captured data is available from internal sources

[3] Depending on the design of the hybrid model, the dependency on external data sources can be mitigated, e.g. through a forecast-based capturing of incoming invoices.

In practise this means that

- **at a defined point in time,**
- **for all result-relevant business transactions,**
- **in a pre-defined format and**
- **based on internal (or external, if available at any time[4]) sources accruals are conducted and used for reporting.**

This procedure offers some obvious advantages: the decoupling of handling/ settlement processes from the closing processes removes the dependency between incoming/ outgoing invoices and reporting. Instead, they can be processed independently, e.g. billing may follow the financial reporting. The time of closing no longer depends on the speed of settlement, but on the development of the data and forecast quality over time. Hence, management can decide[5] when to request the monthly figures and thereby determine the trade-off between the speed of information and the quality of closing (individual time-quality optimum). An accrual in the predefined format is not (or at least less) dependent[6] on the transaction volume. As it is based on internal information, it can be prepared and booked in a standardised form. This saves yet more time and unburdens employees. Billing is not conducted with an exclusive focus on reporting, but can consider specific contract stipulations in terms of invoice/ payment dates. This in turn helps to avoid errors and increases the quality of invoices. The peak times at the beginning of the month are significantly reduced and the workload can be distributed in a more balanced and resource-efficient fashion.

The final invoices then replace the previously conducted accruals in the booking and settlement as well as the reporting systems. This ensures the highest possible quality of data in the cumulated view: only the current respectively last month is based on accruals, for all other months actual values are available. In addition, this procedure safeguards a continuous control and improvement of the quality of estimates.

[4] One example for external sources: stock market settlements that are usually available on the following day but represent an exception.
[5] This decision is not fully independent from the as-is quality of data, as the closing obviously needs to reflect a realistic picture of the company's financial and earnings position. As a rule of thumb a monthly deviation from the actual result of 10-15% is acceptable, though this should be aligned with the auditors.
[6] Depending on whether accruals are done at transactional level.

Capgemini Consulting project examples: Transition from invoice-based to forecast-based month-end closing at an integrated utilities company

In collaboration with various clients, Capgemini Consulting has developed a project approach for how to convert their month-end closing and the related reporting processes. This approach is structured in four phases.

- **Phase I – Identifying relevant business transactions:** In this phase Capgemini Consulting analyses, group and prioritise business transactions by their relevance and frequency based on historical closing data. In workshops and interviews with company experts (especially from back-office, accounting, controlling) the analysis results undergo a plausibility check. The deliverable is a comprehensive catalogue of all existing business transactions and their relevance for company's reporting.

Table 3: Capgemini Consulting project example – catalogue of relevant business transactions

#	Contract Group	Remarks	Valuation basis	monthly closing relevant?	Lead / Source System	Adjustments
1	Brokered OTC	Standard products	Trading System information extracted via data mart	Yes	Trading System	No
2	Exchange	Physical delvieries (Spot,	Trading System information	Yes	Trading System	No
3	M2M OTC	M2M booked as Unrealized Value	Trading System information/ clearing statement (1st BD following month)	Yes	Trading System	No
4	Broker fees		Invoicing System information (net basis)	No	Invoicing System	
5	Trading fees		Spot exchange invoice, as not modelled in Trading System	Yes	Trading System	Yes
6	Transport costs	Supply fees, etc…	Costs: As of today in Scheduling System only, need to be transferred to Trading System, inserted in Trading System or correction information provided	Yes	Scheduling System	Yes
7	Sales contracts "physical"	Physically delivered energy (Market access, etc…)	Trading System information about Sells and Buys; Consumption/ Storage not included	Yes	Invoicing System	Yes
8	Balance Energy for Retail contracts		EDM System (nomination volumes and price information)	Yes	EDM	Yes
9	Asset costs	Fixed costs, yearly costs, tolling fees, etc…	EDM System	Yes	Trading System	No
10	Production volumes ex post		PSA deals in Scheduling System with their volumes and prices	No	Scheduling System	
11	SDL	Set-up / Modeling to be updated	For accruals: Difference between unvalidated metered-data and nomination	Yes	EDM	No
12	SBG-Management	Includes special commodities	Trading Sytem information about produced steam	No	Trading System	Yes

Ideally, Capgemini Consulting can also identify value drivers whose impact on the overall result is negligible. It may actually be recommendable to define, possibly in alignment with auditors and management, specific thresholds below which a business transaction is seen as not relevant for the accruals-based reporting. For example, in one of the projects it was decided to disregard a precise settlement and allocation of broker fees. An estimate was immediately available from the trading system at month end, and historically the maximum monthly variation from the platform vendor's invoice was EUR 30k, which, however, was only available five days later. In a similar fashion not yet validated meter data for the settlement of power plants and wholesale customers, which are available daily via online meters, can be used for month-end closing instead of waiting for validated meter data which may e.g. only be available after 5-6 days and in total only differ about 2% from the estimate.

Excursion – processing open delivery/ sport positions:

Financial reporting aims to apply the caused-by-cause principle in allocating profit and losses to the individual business units, as this forms the basis for all common approaches to value management. This approach frequently has its limitations if the originator cannot be clearly identified or no basis for valuation has been defined (e.g. price). For example, most utilities manage their spot-/ intraday positions centrally to leverage portfolio synergies. Though this is sensible, it also means that a business unit reports the sum of all positions to the relevant grid operators and spot/ intraday exchanges and thereby closes open positions of other business units. For a detailed financial reporting this procedure may cause problems if

a) *no solid data basis exists to value this transaction, e.g.*
   a. Allocation of volumes from speculative trade and corresponding spot position
   b. Cost-by-cause allocation of metered volumes (esp. non-controllable production, retail, etc.)
b) *no definition exists of when the responsibility for these volumes is handed over (e.g. month/ week/ day ahead) and how these transactions are to be valued (e.g. at spot price, balancing power price, option price, benchmark)*

In its projects Capgemini Consulting has frequently developed solutions for this highly complex area which is yet crucial for the quality of reporting. Potential solutions may be:

a) *Organisational: Establishment of a value-add function for short-term position management with clear transfer periods and prices (mostly option prices)*
b) *Structural: Caused-by cause implementation of all energy/ data flows*
c) *Methodical/ process-related: Clear caused-by cause allocation of all energy/ data flows*
d) *A combination of the above.*

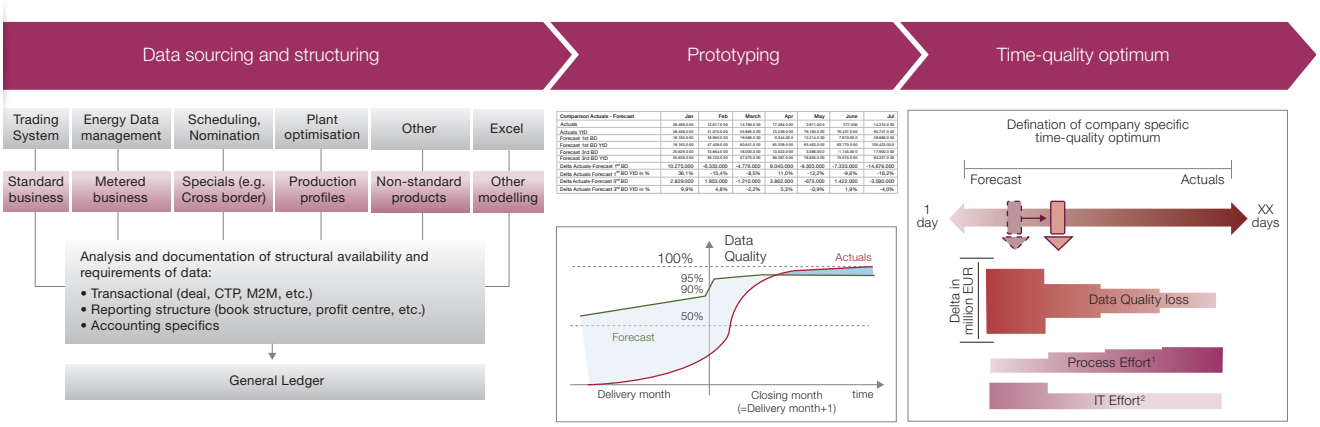
The daily closed physical position for individual business units generated this way safeguards a detailed financial reporting, especially in terms of the internal allocation of profit contributions. At the same time it is the key prerequisite for a quality assured, accruals-based month-end closing, as no deviations need to be identified ex post ? which helps to ensure a high level of acceptance in the back-office.

As a by-product in previous projects this procedure led to a massive boost of data quality and transparency in the energy data management and trading systems.

- **Phase II – Determining data sources and data structuring:** As the examples from Phase I demonstrate, it is essential for the success of forecast-based month-end closing to know what data for a business transaction is available when, in which system and in which quality. This is detailed and catalogued during the second phase. To achieve the best possible level of automation in the flow of data relevant for accruals, Capgemini Consulting analyse the granularity of this data and whether it can be transferred to the closing systems. This is not only done for the forecast but also for the alignment with integrated documents (e.g. invoices). This process of analysing the granularities across all process stages and defining suitable translation keys for the automatic reconciliation between the forecast-based accruals and the actual invoice bookings is called data structuring.

The last key aspect of this phase is the analysis of data quality and its development over time. To this end, the identified data is used to prepare trial monthly reports at various points in time (prototyping) and then compared with the results of the actual month-end reporting. Based on the insights generated by this process the time-quality optimum specific to this company can be defined. This represents the point in time when from a management perspective the results of forecasting come sufficiently close to the actual result, yet a significant amount of time-saving still remains. Other criteria may influence the decision at which point in time forecast values should be established, e.g. necessary investments in IT systems. It is hence vital to include these factors in the analysis and assessment.

Figure 3: Capgemini Consulting project example – optimising the data flow

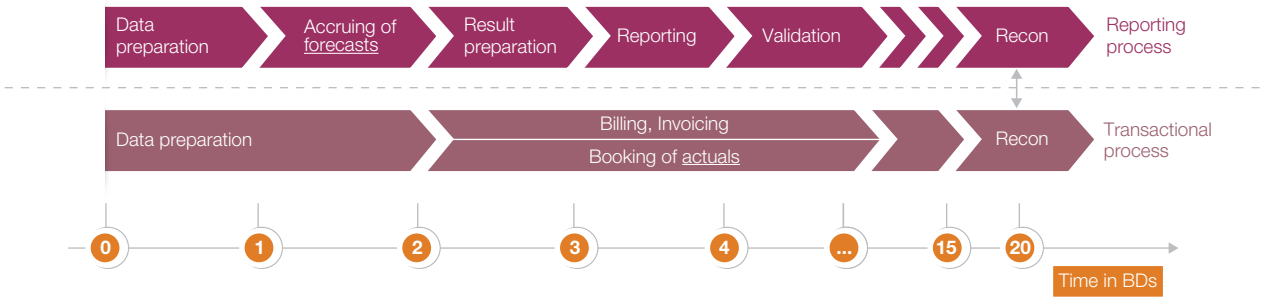


In this specific project we managed to reduce the processing time of month-end closing from 14 to 4 working days. A prerequisite for this was the availability of the final, quality-assured dataset on the second working day of the following month. Capgemini Consulting could continue to use the existing IT landscape; only specific minor adjustments had to be made to the data flow and the necessary check reports had to be developed – which could be done in-house.

- **Phase III – Decoupling and designing the new closing processes:** Having determined the deadline for the forecast-based month-end closing, now the related processes and guidelines need to be defined. This mainly includes rules for how the data for the identified value drivers needs to be prepared, provided and accrued (point in time, granularity, detail of information), and who is responsible for this task. In addition, all systems need to be enabled and designed to efficiently support the data flow, especially if several departments are involved. Equally, potential accounting exceptions or special cases (balance sheet items, taxes, foreign currency transactions, inventory evaluation) have to be analysed and specified. Ideally, initial quality checks may be conducted at this point in time to safeguard the comprehensiveness and consistency of data in all systems, reports and organisational units involved.

  The key element of the approach is the decoupling of the settlement and financial reporting processes. The transactional settlement process is focussed on billing, while financial reporting focuses on the accrual of data and the related reporting. In an ideal scenario both areas are separated time-wise and/or organisationally (e.g. billing in accounting/ back-office, reporting in controlling). To sustain a simplified, more efficient and faster reporting without putting the quality of the transactional processes at risk, interrelationships between the two processes should be identified, newly defined and realigned to the new concept.

Figure 4: Decoupling the reporting and billing processes (Capgemini Consulting project example)



- **Phase IV – Validating and reconciling the results:** In a last step the values of forecast and invoicing are reconciled. To this end, after the financial reporting and billing the results forecasted for a month are matched with the invoices received and sent for this month. As the forecast-based result will be fully replaced by the actual invoices, this comparison is important to identify and clarify deviations between forecasts and invoices. The delta can then be clearly marked, captured in the relevant systems and considered for the next monthly reporting. This type of analysis (back-testing) furthermore allows for a continuous improvement of forecast quality, as potential sources and patterns of error can be analysed (? Ex post) post hoc and – ideally – corrected. Of course, this requires an adjustment of the modelling of the forecast sources, but it also means that reporting contributes to a sustained enhancement of forecast quality and thereby to an improvement of operational decisions based on the forecast sources.

Conclusion

Forecast-based month-end closing enables energy companies to timely determine and communicate their monthly results. The full accrual of all results leads to the highest possible level of standardisation and parallelisation of relevant processes. This results in a massive improvement of the speed and availability of information, while at the same time reducing the need for highly qualified specialists in the transactional processes.

Work profiles can hence be better aligned with the capabilities of the employees, and strategic considerations such as shared services or outsourcing become an option. In addition, decoupling the billing from the reporting process offers the benefit of a far more balanced distribution of employees' workload throughout the month, which boosts the level of satisfaction and motivation.

The consistent use and subsequent check of the forecast data helps to uncover systematic errors and therewith improves the quality of critical data in the long-term. Leveraging the long-standing project experience of Capgemini Consulting delivers our clients a smooth implementation across all affected business areas, frequently accompanied by quality improvements also in adjoining processes.

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