



STRATEGIC PLANNING WITH THE SMART GRID COMPASS®

Preparing for **future challenges**

SIEMENS

At a glance

In central Europe, the energy sector is experiencing a paradigm shift. The traditional energy system is characterized by conventional energy generation where the generating capacity is driven by consumption. This system is developing into a more sustainable model with predominantly decentralized energy generation in which energy loading matches energy generation.

In parallel to technology, also the energy market is changing. The incumbent players are trying to defend their market position. In many countries also the regulatory framework has changed. In Switzerland, for instance, the second phase of market liberalization has yet to take place. To be in a position to respond to these challenges, energy companies need to undergo a structured alignment process. A successful implementation of these new business models will be crucial for a strong positioning in the market.

In spring 2012, Aziende Industriali di Lugano SA (AIL), the municipal utility in Lugano, commissioned Siemens with a project to prepare the company for future energy market requirements. The objective was to develop planning and preparation measures in order to transform AIL into a future-oriented company. The proven Siemens method applied in this project is the Smart Grid Compass consulting framework.

The challenge

As an integrated energy company, AIL is active across the entire value chain, from generation, to operation to retail.

The reasons for the project were manifold. First of all, AIL needed to gain fundamental understanding of their development opportunities, which departments needed to be considered and which strategic objectives should be achieved. On this basis, a prioritization and step-by-step detailing exercise had to be performed. Only then was AIL able to give clear answers to classical planning questions such as "Where do we make a start with the implementation?". Another important reason for the project was the lack of clarity regarding the costs for any additional activities on top of and beyond the measures they had already planned and budgeted.

Our solution

Project execution was based on Siemens' Smart Grid Compass – a strategy consulting framework which serves as a support tool for energy companies in the planning and implementation of strategic programs. This approach is characterized by a strong focus on value creation and feasibility.

The Smart Grid Compass model covers all major business domains of energy companies – for instance, network operation, customer service and maintenance. Across these business domains, the model considers the three dimensions of business objectives, business processes and functional reference architecture. Based on these three dimensions, and by leveraging the business processes, the Smart Grid Compass model bridges the gap between technology and desired business objectives.



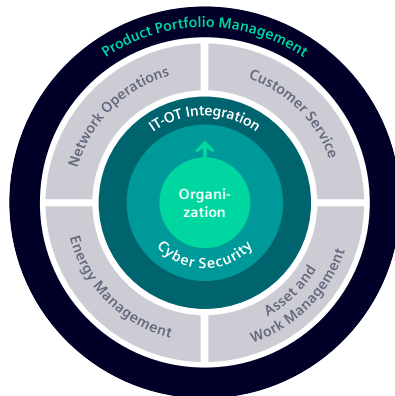
Figure 1: Map of Ticino canton in Switzerland (source: Wikimedia Commons)



Aziende Industriali di Lugano, wholly owned by the city of Lugano, is the largest municipal utility company in Southern Switzerland's Ticino canton. AIL employs some 320 people and supplies around 110,000 customers in the Sottoceneri region with electricity, natural gas and water and is also responsible for public lighting.

"Without the coordination and know-how of an external consultant practice it is difficult for a multi-utility company to discuss these complex topics and take decisions regarding next steps."

Giampaolo Mameli,
Vice Director of AIL



Three project phases

The approach used to plan and develop the program for AIL was based on Siemens' Smart Grid Compass model and consisted of three phases: the orientation phase, the destination phase and the routing phase.

Orientation phase

In the orientation phase the project team only considered the two dimensions of business

objectives and business processes. The project teams prioritized the business objectives and captured the capability levels of the current business processes. In a next step they defined the capability levels necessary to achieve the objectives for each individual business process. Based on this information the teams compiled a provisional list of candidate initiatives containing over 50 proposed measures and produced an initial roadmap.

Destination phase

In the second phase, the technology dimension was examined. Drawing on Siemens' functional reference architecture the existing technology functions were identified. The project teams then estimated the costs for any missing technology functions. The proposed measures from the first phase were evaluated with regards to their impact on AIL's defined business objectives and on the required cost of implementation.

By applying this information and taking into account various scheduling and budgetary constraints, it was ultimately possible to develop and evaluate alternative scenarios for AIL and do some initial budget planning. Once the destination phase was completed, AIL opted for a scenario which enables the transformation process to be completed within the next ten years.

Routing phase

During the routing phase the selected scenario was defined in more detail. For each initiative and technology project, work packages were defined and roles assigned. This approach allowed for precise cost estimation and revealed the costs for the entire program. In parallel also the effects of the individual measures were estimated. Using impact chains and applying more than 100 parameters, 20 key performance indicators (KPIs) were derived. These were then used to develop the business case for the program in an extensive cost-benefit analysis.

The final step in phase three involved the definition of a detailed schedule, taking into account all the important interdependencies between the various areas.

Project extension: Siemens continues consultancy in navigation phase

The AIL project was completed in late fall 2013. In January 2014, AIL started with the implementation of the roadmap and commissioned Siemens with the fourth phase of the Smart Grid Compass framework: the navigation phase. During this implementation phase Siemens will monitor the achievement of individual milestones and, if required, adapt the roadmap to a changing business environment.

Conclusion

The decision to involve a partner against conducting the planning and preparations on its own was elementary for AIL. According to Giampaolo Mameli, Vice Director of AIL, there were four main reasons to involve Siemens as the strategic consultant:

- the expertise of Siemens across the entire value chain,
- the international project experience of Siemens,
- the future orientation and innovation capability,
- the possibility of international best practice exchange with other municipal utilities, facilitated by Siemens,
- AIL's way into the future is now paved. In only one-and-a-half years AIL completed the three phases of the Smart Grid Compass. It now has an implementable 10-year Smart Grid Value Creation Program at hand. Today, AIL is implementing the program and has again chosen Siemens for continued support. This ensures quality and value creation which is the overall Smart Grid program objective.

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