

Establishing an Integrated Information Management in APGENCO through SAP ERP

About APGENCO

Andhra Pradesh Power Generation Corporation Limited (APGENCO) is one of the pivotal organizations of Andhra Pradesh, engaged in the business of Power generation. Apart from operation & Maintenance of the power plants it has undertaken the execution of the ongoing & new power projects scheduled under capacity addition programme and is taking up renovation & modernization works of the old power stations

APGENCO came into existence and commenced operations from 01.02.1999. After reorganization of state of the Andhra Pradesh according to Andhra Pradesh Reorganisation Act, 2014, the assets, liabilities, employees etc. of APGENCO are apportioned between the two successor states.

The installed capacity of APGENCO as on 02.06.2014 after Andhra Pradesh State Reorganisation is 4559.6MW comprising 2810.0MW Thermal, 1747.6 MW Hydro and 2 MW Wind power stations contributes about half the total Energy Requirement of Andhra Pradesh.

ERP Implementation

APGENCO chose SAP ERP to automate and standardize processes across 27 locations. The project was named "SHAKTHI" (System to Harness APGENCO Knowledge Transformation for Harmony & Integration) as it promised to lead into new area of Information management in the organization. The project was aimed to establish integrated business application architecture based on an ERP backbone that will support day to day functioning and will in turn move its business strategy forward

APGENCO partnered with SAP India for supply and implementation of SAP ERP across 27 APGENCO locations

ERP Implementation Details:

SAP Version	:	ECC 6.0, EHP6
Number of SAP Users	:	3200
SAP modules implemented	:	FI-CO, MM, PM, PS, QM, SD, HCM & Payroll, ESS, Environment, Health and Safety (EHS), Document Management System (DMS), Collaboration-Folders, Supplier Relationship Management (SRM), Manufacturing Integration and Intelligence (MII) & Business Intelligence (BI/BOBJ)
Project Go-Live date	:	01.08.2013

“Our new SAP Solution has laid down the foundation for sustainable reforms by integrating and enabling the core business operations with information system at the transaction level.”

Mr. A. Rama Rao, Executive Director (IS), APGENCO

Key Challenges before SAP ERP was implemented

Before implementing SAP ERP, APGENCO faced multiple challenges across the organization due to limited adoption of information technology leading to limited process maturity. Some of the key challenges being faced by APGENCO were:

- Very difficult to consolidate the data from 27 locations at corporate level for better decision making and also for monitoring the operations of the plants
- Applications were running in standalone mode and there was lack of integrating among the systems
- Consolidated financials of all the plants were available only at the year-end after a lengthy process of collecting and consolidating the data
- Procurement processes were manually controlled/monitored through segregation of duties
- Lack of visibility on inventory across the plants
- Each location maintained its own data for employees and employee history manually .
- Manual tracking & control of funds/budget
- Difficulty in managing large expansion projects
- Monitoring the huge maintenance activities of plants from HO

Reasons for Choosing SAP

Project SHAKTHI was designed to overcome these business challenges and needed an integrated IT application platform that can connect and integrate all the processes across the organization. After a thorough evaluation, APGENCO choose SAP ERP due to the following reasons:

- SAP is the comprehensive system having most of the functionality with seamless integration
- It is having robust framework to enhance the functionality to suit the specific business requirements
- It is product well suited to Public Sector environment as it has required localizations
- Large public sector organizations in power generation are already using SAP

The implementation best practices

APGENCO followed the ASAP methodology for implementation and in addition undertook the following key activities in a planned and coordinated way to ensure that the project is implemented within the envisaged timelines:

Business Process – Getting the inputs and defining the To-Be processes. Involved all the stakeholders departments from various locations to share their views and actively taken inputs in the SAP process walkthrough

Technical issues – Infrastructure (Networking/Servers/Landscape) set up coordinating with various agencies in remote locations

Change Management – User awareness & acceptance for new system by conducting workshops at the locations publishing project newsletters, conducting SAP processes demos at location during the business processes & realization phases itself.

Project Management – Project Governance, KPIs monitoring, Scope creep. Project status and SAP walkthrough presented to all the stakeholders on a regular basis

Master Data – Formed master data management teams at the locations for coordinating the activity and initiated the activity along with the project start date. Collected, cleaned, formatted and validated the data

Training – Project team training, power users & end users training. Project team was trained before the start of the processes finalization activity, so that the team is well acquainted to the SAP processes. Power users were given the overview training and involved from the realization phase to have effective testing. All the end users were trained at their working locations before go-live. Selection of the core team from all the locations enabling them to be part of the system.

Project Benefits

Project SHAKTHI was one of the largest SAP implementation in power generation organization. The entire scope of SAP ECC with all core modules including add on components, like SRM, EHS, MII, BI/BOBJ were implemented in a span of 11 months. Some of the key benefits of the project are:

- Reduction of inventory from Rs. 440 Cr to Rs. 300 Cr (45%) in a span of 12 months
- 100% tracking of the coal movement
- 10% reduction in break-down time of equipment
- Through Fuel Management enhancement, APGENCO is able to cover the entire cycle from planning to payments and consumption monitoring of Coal, Fuel Oils in the thermal power plants which contributes to around 80% of the expenditure
- Minimising the breakdown time of equipment by effective utilization of the spares from other locations and viewing the solution given for the similar breakdowns in the past at other locations thereby improving the availability of the equipment.
- The overall quality of data is enhanced, thereby improving the flow of information across the organization for better decision support.
- Enabling the core business operations with information systems at the transaction level has laid the foundation for sustainable reforms
- Improved the organizational operational efficiency with transparency across the organization.
- **Efficient Energy Billing:** Capturing of energy meter readings, consolidation of the readings category wise like thermal & Hydel and generation of power bills as per the Power Purchase Agreement
- **Better Fly Ash Management:** Complete disposal of fly ash to various brick and cement industries are monitored and the receivables are immediately reconciled. This has been achieved through integration of weighbridge using SAP MII to capture the truck weightments directly into SAP ERP
- **Transparency in Procurement:** Tracking of purchase history from procure to pay is available in SAP in real time
- **Safety Compliance to Permit to Work:** Implemented SAP's Work Clearance Management (WCM) solution to manage the process of initiating and approving Permit to Work (PTW) to ensure safety requirements for different type of work permits

The SAP solution has helped APGENCO become more efficient and responsive to customers – the power purchasers. They are in a better position to support the requirements of customers. Energy billing

solution has also helped them reduce the time to reconcile energy sent out and for energy audit. As an organization, they are now geared up to meet the challenges that lay ahead

The entire HR related activities including Payroll, administration, appraisal, recruitment, training and quarter's management is being done through SAP. This has resulted in improved efficiency and transparency, which has led to increase employee satisfaction. Through Employee Self Service (ESS) tool, employees can access personal Information, Payslip, Form-16, Leave status etc. online. This has reduced the time that used to be taken earlier to provide employees with these information and also boosted the morale of employees

Awards & Recognition:

APGENCO's ERP implementation is turning out to be a benchmark for other utilities. Since going live, many other utilities across have visited APGENCO to study their ERP implementation.

SKOCH Award 2014

APGENCO bagged the SKOCH Award 2014 in best project category for project SHAKTHI in the country at the 38th Skoch Summit on 'Resurgent India- Competitive India' held at New Delhi.

SAP ACE Award for Public Services: SAP ACE Award for Public Services recognizes the pioneering organizations across PSUs, Utilities, Central and State Government agencies, which have successfully used SAP Software solutions to drive business impact in their organizations and become a role model for other organizations of their industry.

- **Can you give some insights into why this project was initiated?**
 - Targeting for increasing generating capacity to 12,000 MW by 2019
 - Entering into other domains like renewable energy (Solar & Wind) Captive Mining, O&M Contracts, and Consultancy etc.
 - Optimizing the generation costs to meet the Regulatory requirements
 - O&M Practices to improve Units availability and Efficiency
 - Uniform processes across the Plants
- **Key Success Factors for the Project**
 - **The Management** : Unstinted support from Selection of vendor, Selection of Core Team, Timely approvals for Process changes, Guidance by Top Management, Functional/Station heads
 - **The Core Team**: Passion to learn, commitment towards the timelines in implementation. They demonstrated their highest skills in all phases of the project and coordinated as a bridge between Process owners, End Users and the Consultants.
 - **The Consultants**: The implementation was by OEM, i.e M/s SAP India. They deployed their best, experienced team for training, development and implementation activities. At times they also provided Global resources, Practice heads, where ever needed.
 - **Our Employees/End Users**: Though the organisation moved from totally manual, Semi Automated process to a totally automated system, with little bit of training their sincere hard work and keenness to learn and work made the system successful.
- **Main Challenges in implementing and Rolling out the Project**
 - **Business Processes** – Getting the inputs and defining the To be Processes
 - **Technical Issues** – Infrastructure (Networking/ Servers/ Landscape) set up
 - **Change Management** – User Awareness & Acceptance for new system
 - **Project Management** – Project Governance, KPIs monitoring, Scope creep
 - **Master Data** – Too many files (soft & Hard) Collection, Cleansing, Formatting, Validation
 - **Training** – Project team training, selection of Power Users & End users for training

- **Key learnings**
 - Business Processes Finalization – Massive exercise in finalizing the business processes by conducting number of workshops, ERP process walk through various stake holders.
 - Setting of ERP landscape – Finalization of vendors for servers, Finalization of data centre location, Installing etc. are to be taken up along with ERP kick off
 - WAN Connectivity - WAN connectivity with telecom providers like BSNL, Reliance etc is more time taking and coordinated effort
 - Effective Project Management – regular monitoring of Project progress, setting up of Review/Reporting Mechanism like Steering Committee and Apex Committee. Steering committee review and directions are major contribution to the Project success
 - Change Management - Conducted number of workshops and product walk through from the starting of the project. "SHAKTHI" newsletter published and distributed to all the stake holders/employees of the corporation.
 - User Trainings – One to one trainings covering all the users are programed well in advance and conducted at locations.
 - Master Data Governance – Collection of huge master data related to materials, vendors, Employees, Equipment is the laborious task. This was achieved by forming separate ERP teams at locations and started this activity from the beginning of the project.
- **In retrospect, what could have been done better during the implementation of the Project? Would you do it differently the next time?**
 - Master Data Collection from the locations and consolidating and standardization is the major activity still this can be planned in advance i.e before the project initiation
 - Handling of prerequisites like WAN connectivity taking lot of time
 - End user training i.e sufficient number of days like 3 to 4 days can be given so that the post implementation support effort will be reduced.
 - Managing the cut over period (Transition/open items data migration) from Manual system to ERP system – this should be min as possible by planning well in advance, atleast by doing 2 trial runs

- **In your view, did the project achieve the desired outcomes or business impact? why or why not?**

- Yes, we have set benefits and desired outcomes achieved
- Overall quality of data is enhanced, thereby improving the flow of information across the corporation for better decision support
- The Annual Accounts for the year 2013 – 14 was closed in SAP within 25 days against the 90 Days period prior to ERP
- Reduction of inventory from INR 440 Crs to INR340 Crs due to centralizing the Inventory and carried out system driven reconciliation. Visibility of Inventory across the organization is now available in real time.
- Transparency in Procurement: Tracking of purchase history from procure to pay is available in SAP in real time
- Employee productivity increased by 10% - redundancy work is eliminated, better decision support, manual effort eliminated in data consolidation and reconciliation