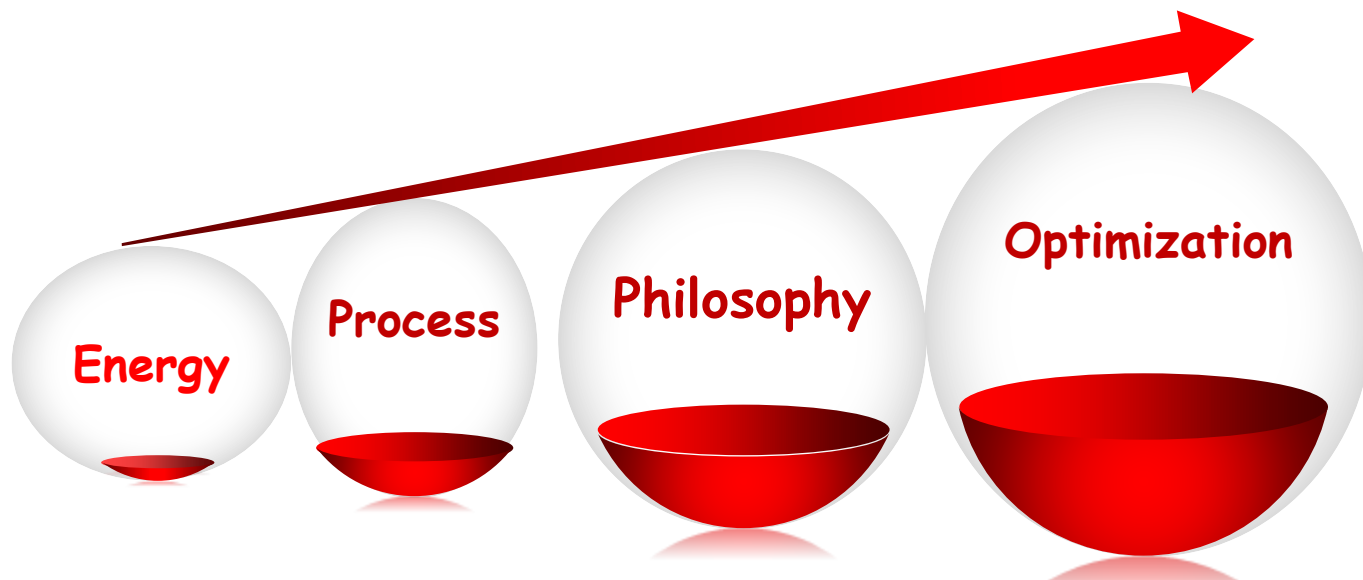


ENERGY OPTIMIZATION

A NEW APPROACH

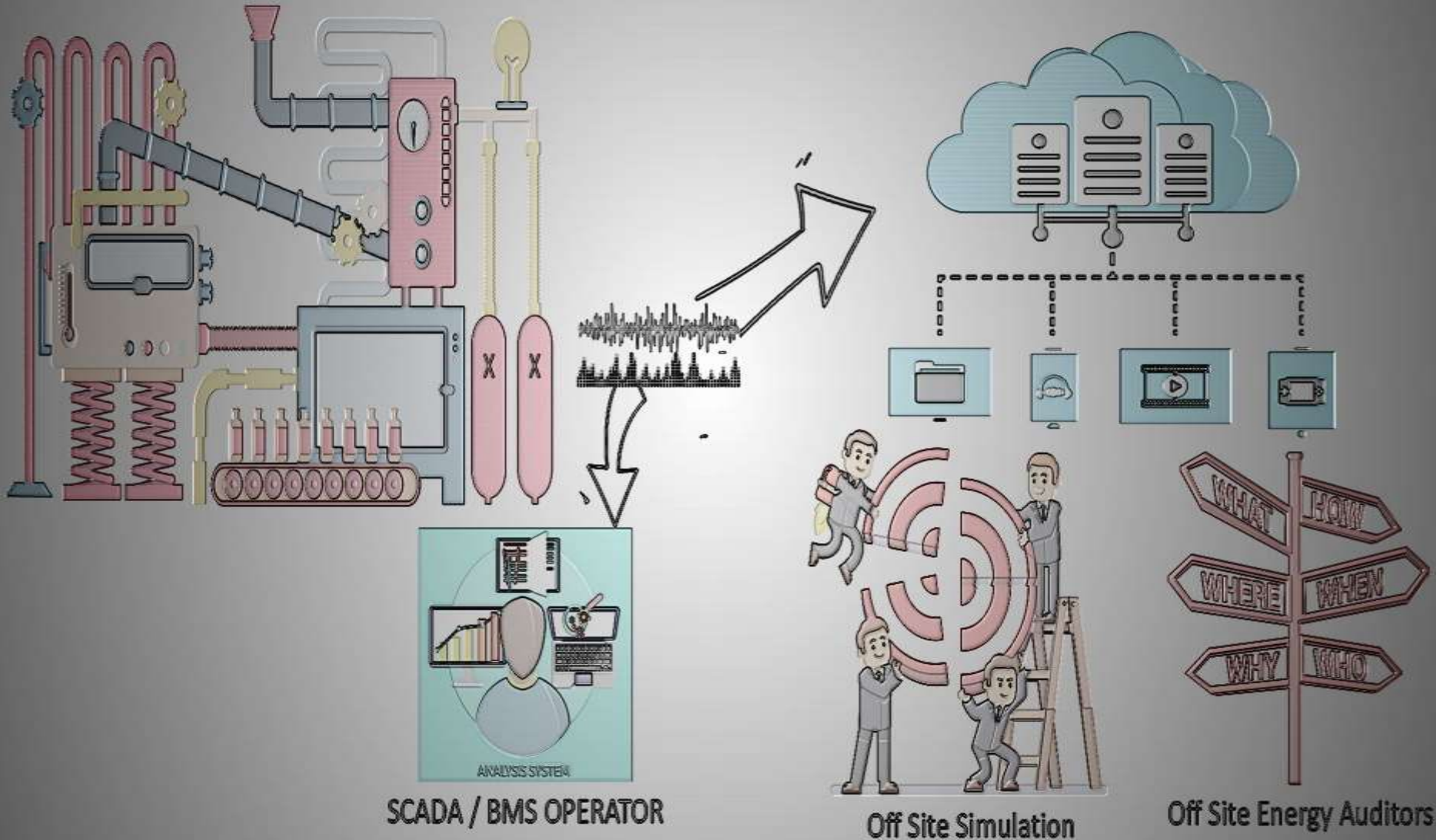
**MICRODATA SIMULATIONS SOLUTIONS FZCO
DUBAI**



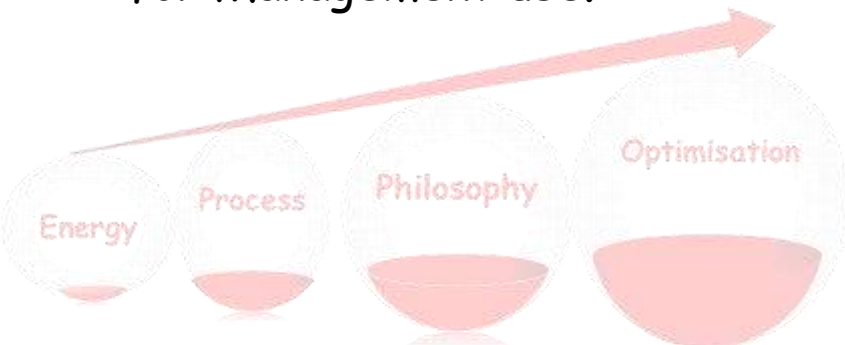
- Microdata Simulation Solutions FZCO (Microdata) provide Energy Optimization Solutions for High Energy Consumers.
- Microdata is managed by a team who are specialists in Data logging, Data simulation, Energy analysis, and SCADA / PLC process tweaking. We also have hardware and software skill set in IOT's, Dataloggers, Big Data analysis, and software computing skills of MIS reporting.
- I am a Senior Consultant in IT in Power Distribution (including Smart Grid) with **REC Power Distribution Company Limited**, an ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007 Certified Company, a wholly owned subsidiary of REC Ltd., a 'Navratna' CPSE under Ministry of Power, Government of India. I have over **40 years experience in Teaching and Industries, and am a Certified Energy Auditor.**
- Microdata and its associates are in this field in for the last 20 years, and have implemented "Electronic National Agriculture Market" network pan India for Agriculture Produce, Mumbai Octroi, etc. which shows our strength in handling Big Data in Real Time.



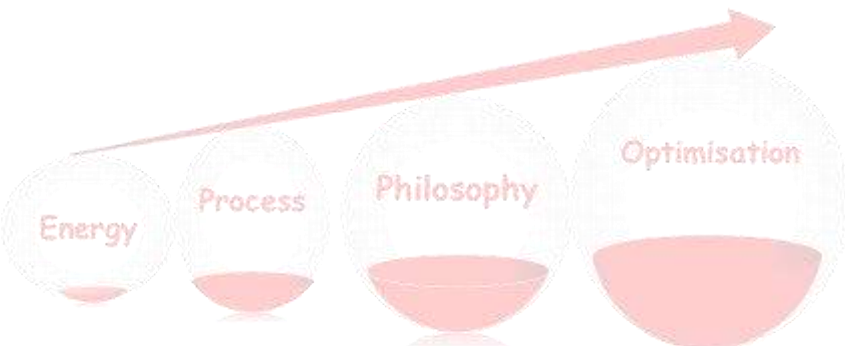
Energy Optimisation Philosophy



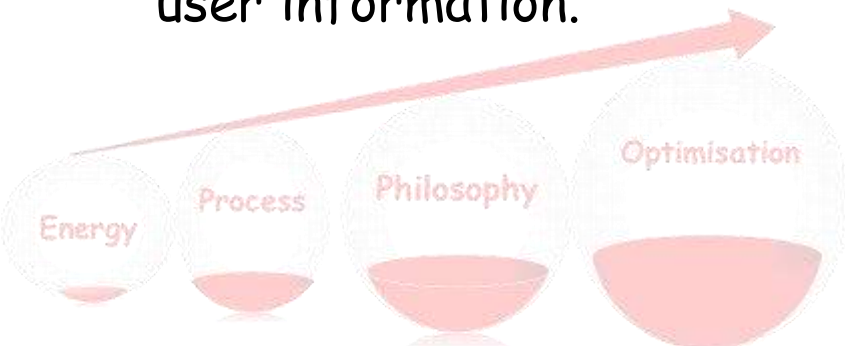
- Energy, Process (including HVAC), Production and other relevant environmental Data is extracted and logged at regular intervals (1 second to 120 seconds) from the system.
- Data retrieval is **non-invasive** and does not intrude in the running system.
- Data is uploaded to a Cloud, where all calculations are done to compute the Energy Flow and Energy loss in various locations and processes.
- This Energy Flow, Losses, and Value are shown on a web based dashboard to all authorized users, who track the daily variations in Energy usage.
- Based on process pre-defined limits, alarms and notifications are given to relevant users as alerts.
- Business Intelligence (BI) reports can be extracted from the system for Management use.

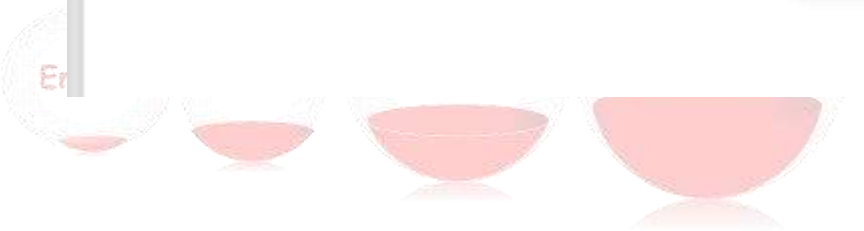
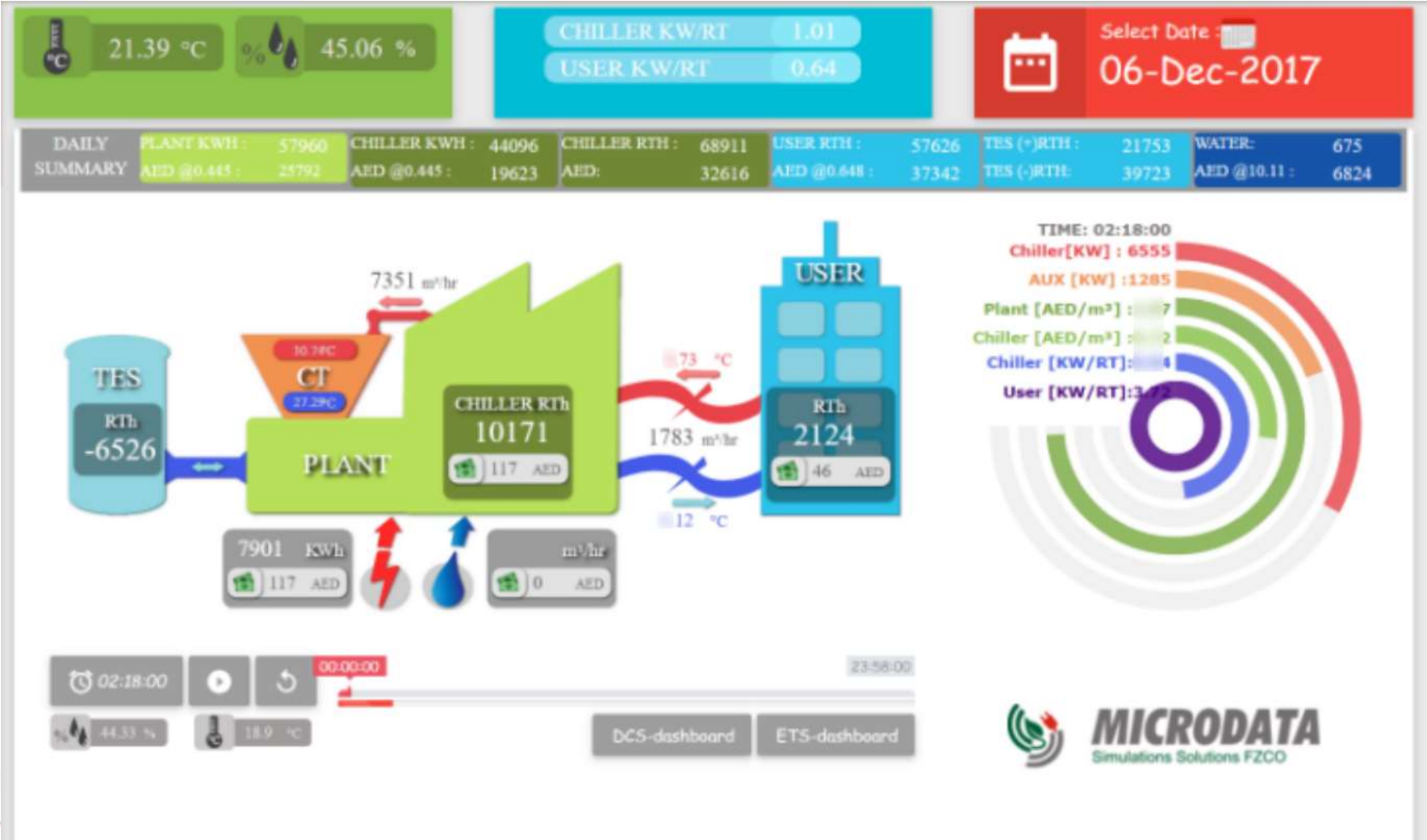


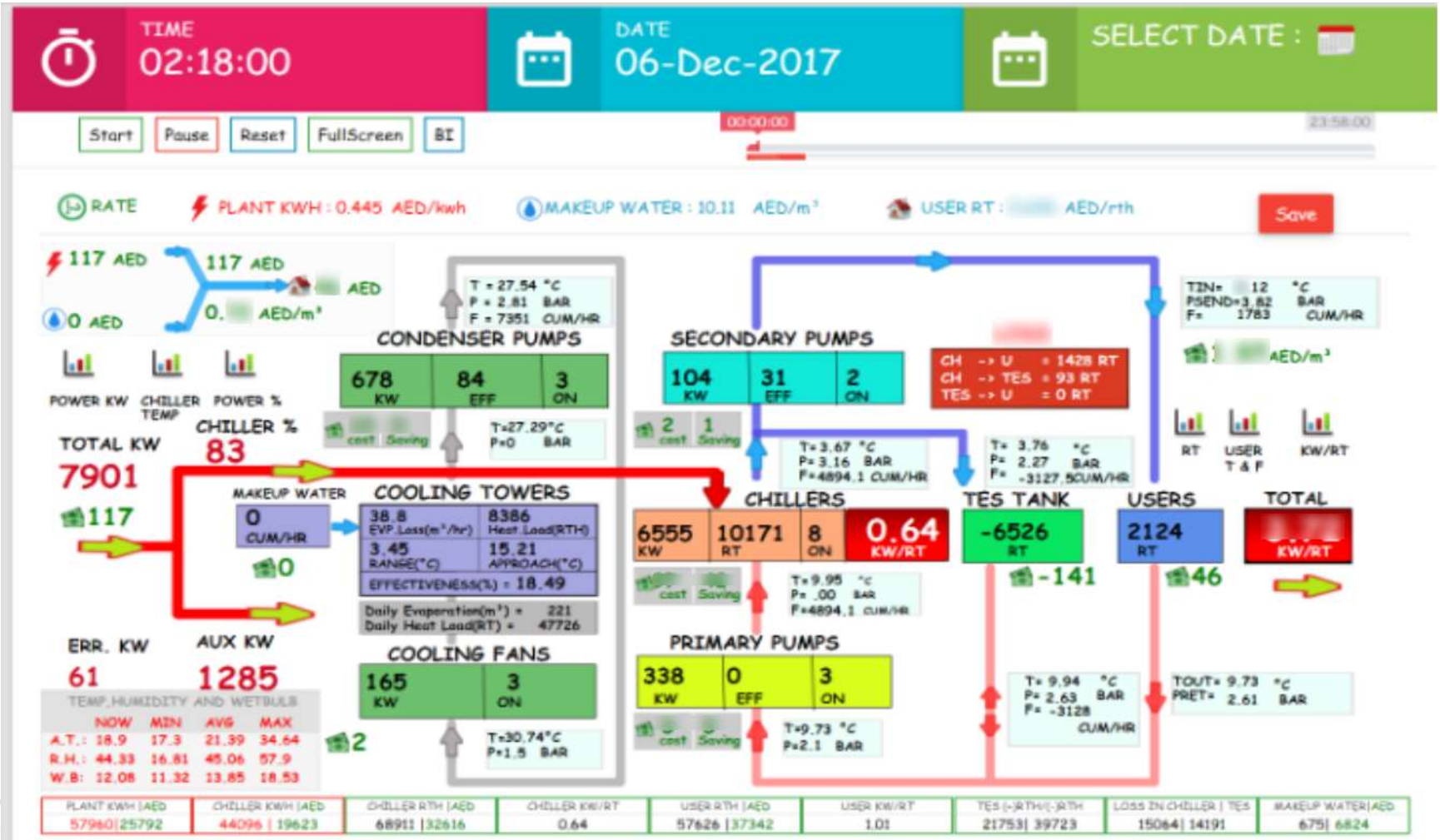
- Meanwhile, a team of Offshore Engineers having expertise in **Energy Audit**, also analyse this data for the last 6 - 12 months to generate the following:
 - Energy requirement
 - Production / Usage wise
 - Time wise
 - Location wise
 - Cost wise
 - **Establish a Relationship** between different processes / parameters with regard to Energy consumption and losses.
 - Generate a Post Mortem report on the past data for the Management comments
- A divergence report based on Global indices is created, showing the quantum of losses.



- A team of Offshore Engineers having expertise in **Computer Simulation** also use this 6-12 month old data to create a Computer Simulated Model of the complete process / plant.
- They use high end Electrical / Mechanical / Chemical Simulation software for modelling. (Typically ETAP, MATLAB, ANSYSYS, HYSYS, MITAB etc)
- Based on the simulation, the following reports are generated:
 - Equipment condition, and deviation from the design.
 - Process deviation from the design
 - “What if” analysis, if any equipment if to be shut or replaced.
 - Notional savings if the equipment / process was as per design.
- Dashboard generated earlier also shows the notional savings for user information.

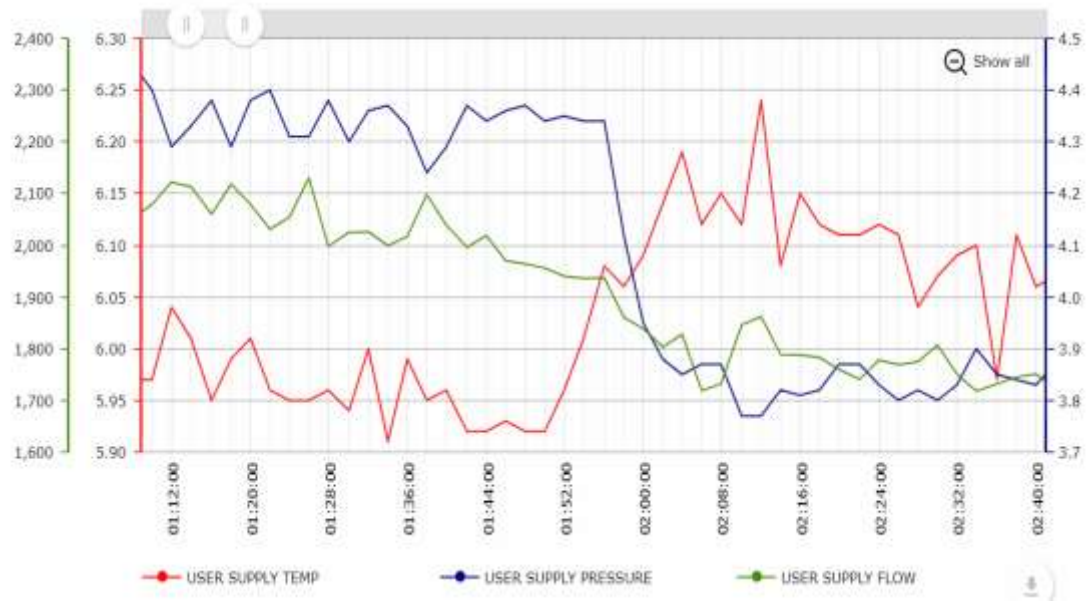
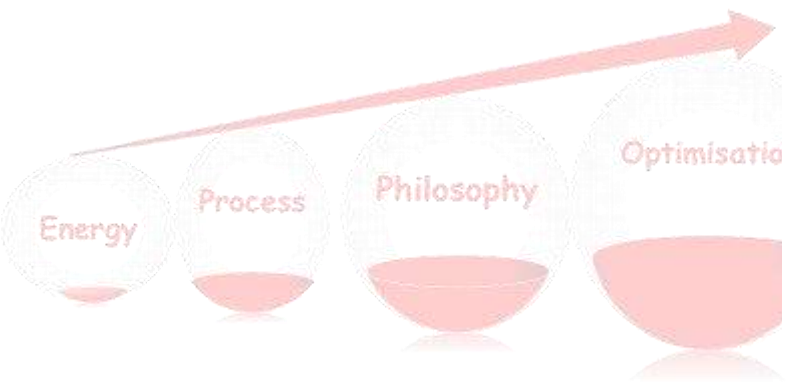




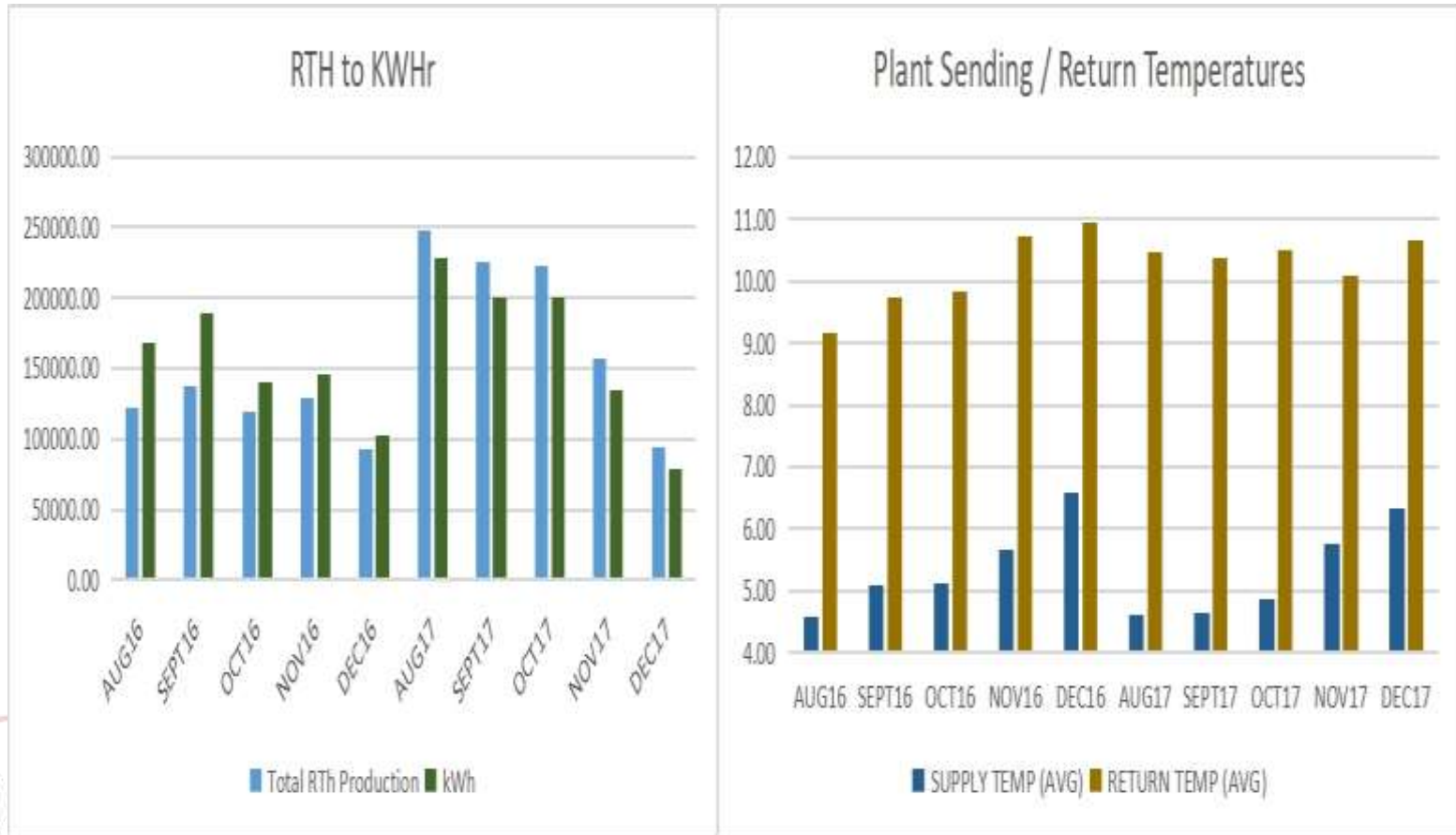


Energy



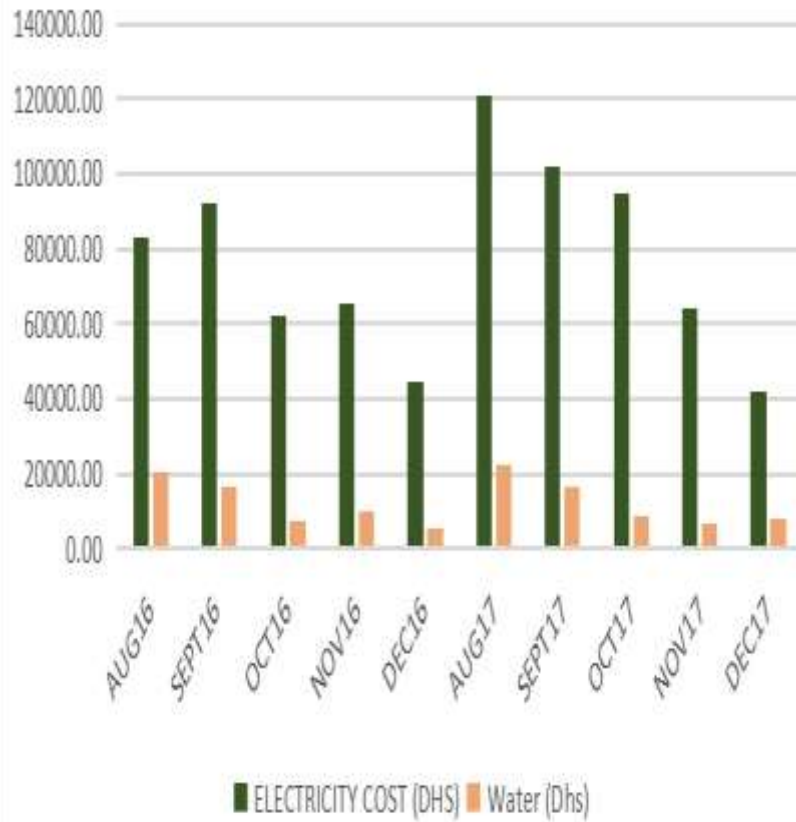


- 40000 TR District Cooling Plant with 31 Energy Transfer Stations.



Energy

DEWA COST



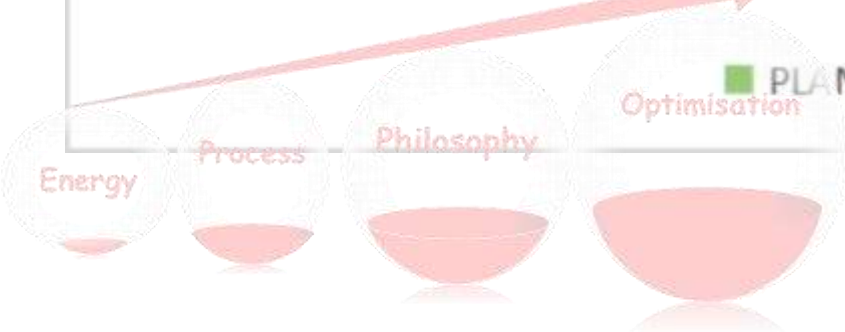
PRODUCTION EFF KW/RT



| Month | % YOY |
|-------|-------|
| AUG | 50 |
| SEPT | 54 |
| OCT | 30 |
| NOV | 31 |
| DEC | 31 |

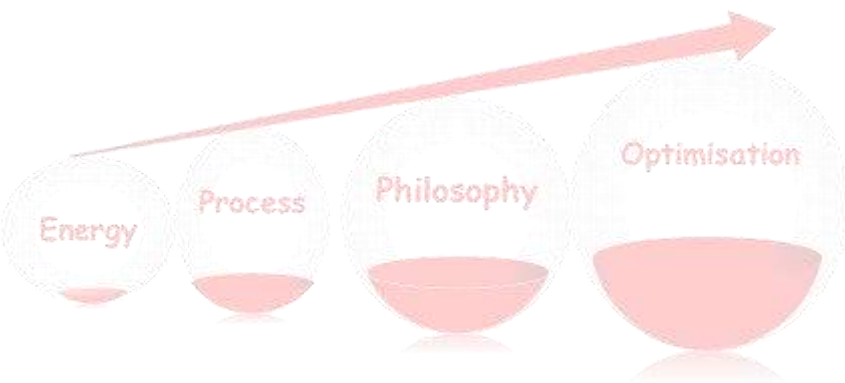
PRODUCTION COST DHS/RTH

| Month | % YOY |
|-------|-------|
| AUG | 57 |
| SEPT | 56 |
| OCT | 33 |
| NOV | 37 |
| DEC | 18 |



■ PLANT COST Dhs/RTh

- ✓ Energy Optimization based on **Past Data Trends** give more meaningful insights.
- ✓ Data analysis by **Energy Auditors** give a **second opinion** on the Energy losses and savings.
- ✓ Simulating the Process / Equipment gives a **non-invasive insight to its mechanical condition**, process set-points and deviation from Best Efficiency Point.
- ✓ Dashboard available to all the Users give a **Energy Saving Centric Thought Process** in the organization.



Contact

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