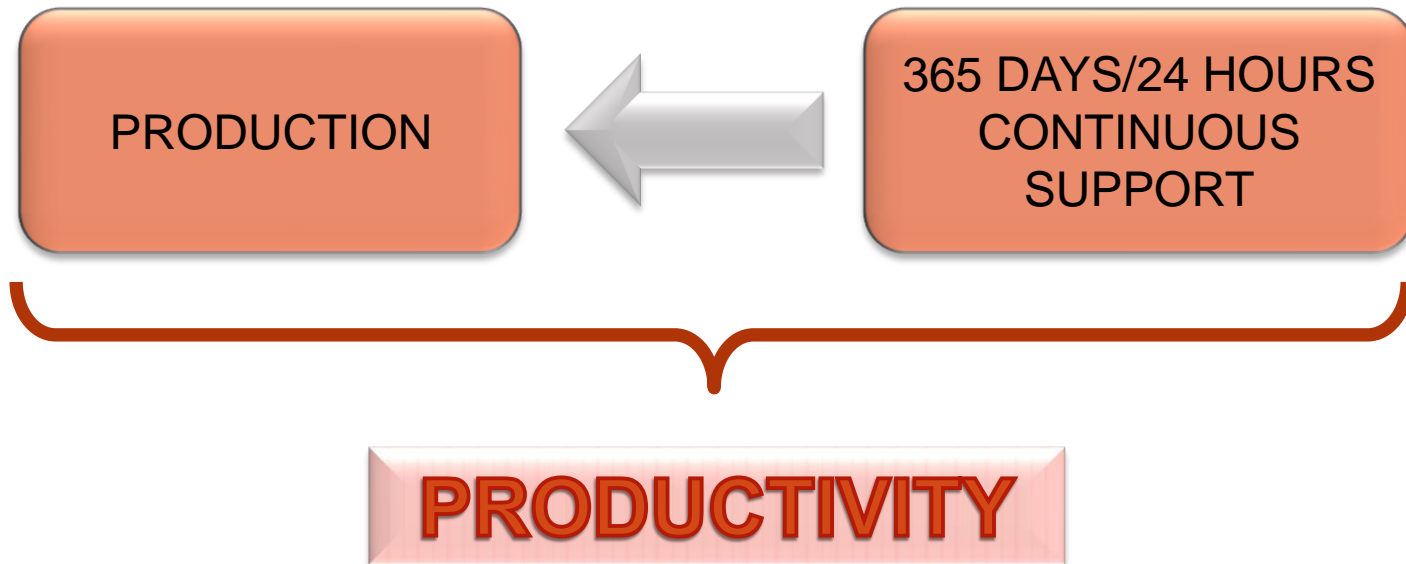


# PRODUCTIVITY MANAGEMENT IN ASELSAN

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# PRODUCTIVITY MANAGEMENT IN ASELSAN



In ASELSAN, at the applicable areas Lean Management Techniques such as;

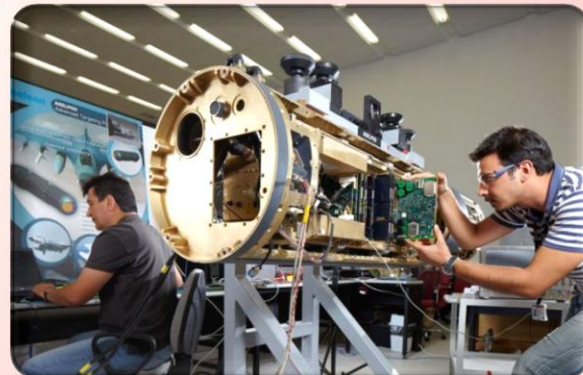
- ◉ Continuous Improvement (KAIZEN),
- ◉ 5S,
- ◉ 6 Sigma,
- ◉ Value stream mapping etc.

are being used.



Thus;

- ⦿ Non-value adding actions and wastages are being minimized,
- ⦿ Through the intermediate-inventory cost, the total production time is being reduced,
- ⦿ Full compliance is ensured in scheduled dates,
- ⦿ Operational costs required for production and wastage amounts are being reduced.



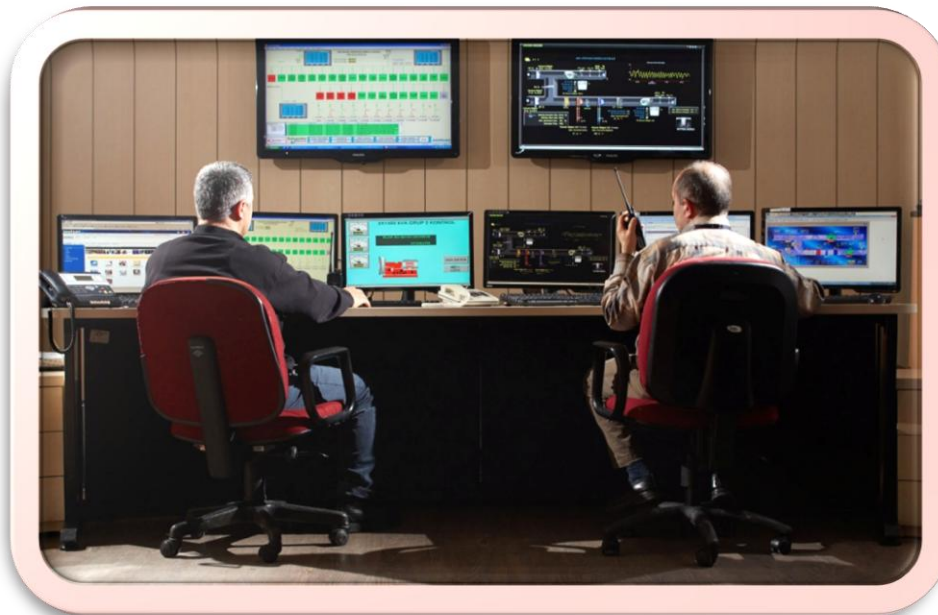
- For ensuring the infrastructure required by the sustainable production in an uninterrupted, quicker and efficient way “Help Desk” is established on the intranet (internal network).



- While supporting sustainable production, the necessary attention is also paid to the environment, occupational health and safety and efficient use of energy.



- Proper conditions are provided at spaces by using building automation in control of central air-conditioning systems and immediate response is provided to any potential problems.
- By PID control, local conditioning is being provided through a proportional and integral approach logic.



For new investments; equipment selection and system installations are being made meticulously.

Low energy consuming,  
technological, automatic  
controlled and environment  
friendly devices

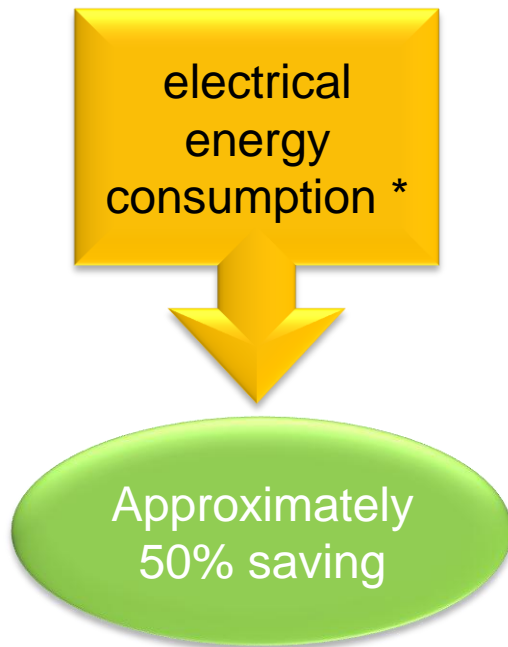


Human error  
factor,  
damage to  
the  
environment

Efficient use  
of energy



- The circulation pumps used at the central heating and pipes of the central heating are replaced with EFF1 class, more efficient pumps that have the same capacity with lower engine power.



\*: During the months in which heating is on

- Old central heating pipes are replaced, and special liquids that do not require discharge and composite pipes minimizing the loss of heat and insulation are provided.



**30% loss of heat is prevented**



- Natural gas is more environment friendly and generates less CO<sub>2</sub>, as far as fossil fuels are concerned.
- Thanks to the burning management system used in boiler operations, the boiler efficiency is around 94-95%.



- The need for cooling of the test devices is met by the cooling tower and thus the amount of water consumed in 6 hours is reduced to 1m<sup>3</sup> from 120m<sup>3</sup>.
- The system paid off in approximately 1 month.



A simple system  
with low cost

Natural  
resources  
consumption

Waste water  
discharge

- Heat recycling is provided from the compressors used in pressure air generation.
- The recycled heat is being used for;
  - Heating at the buildings during winter,
  - Hot water supply during summer.



Natural  
resources  
consumption  
(55.000m<sup>3</sup>/year  
natural gas)

Recycling the  
waste heat

- The devices used in central heating, cooling and air-conditioning are mixed air systems; so both the oxygen amount required in working spaces is being adjusted in conformance with the standards and the devices are used more efficiently.



Thus; the cool air absorbed from the cooled volumes during summer and the hot air absorbed from the heated volumes during winter

Heat recycling  
in cooling  
35%

Heat recycling  
in heating  
50%

- On the engines of the central pressure air compressors, frequency inverter devices are used to provide an operation intended at the capacity need. Consequently; during nights and weekends when the need for air is lower; thanks to the automated controls the device operate at lower rotations.



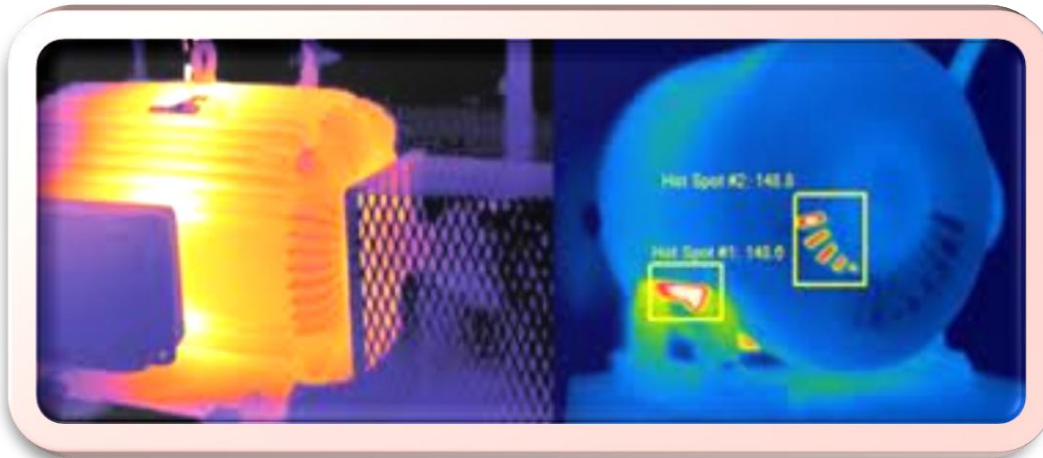
Approximately 20% saving in electricity consumption.



**Pay off period: 3years**



- Using predictive maintenance principles; measurements and analyzes are made on the pumps and engines located at various places of the plant.
- Malfunctioned ball-bearings, the malfunctions on the old type pumps such as coupling, balance etc. are detected and fixed to ensure the continuity of the equipment.



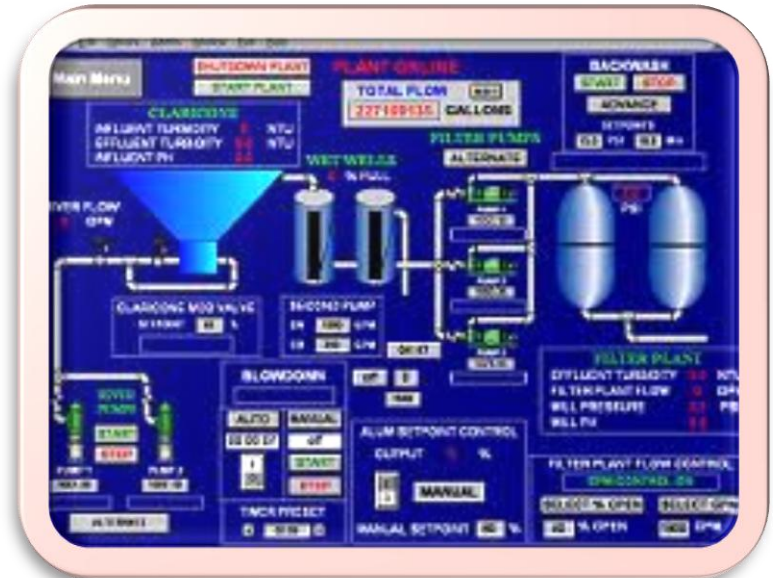
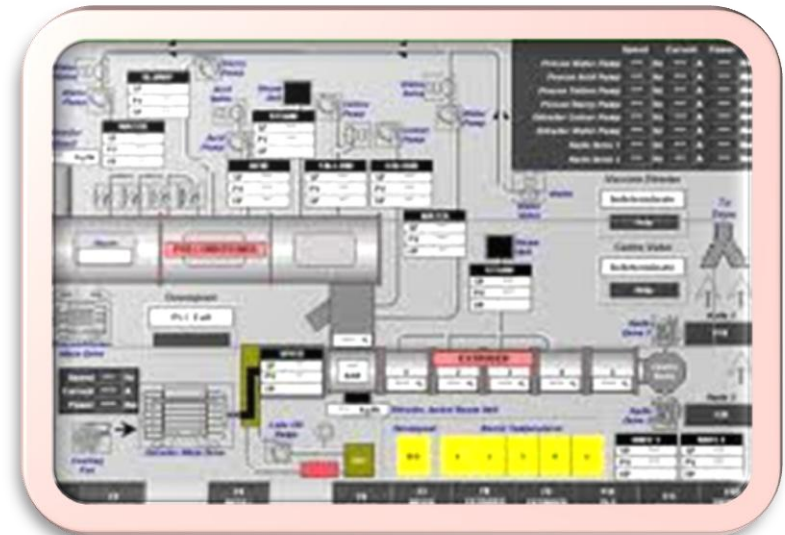
- The number of taps with sensors are increased in AESELSAN and saving tips are installed on the water taps.

**The amount of  
water used is  
reduced to 1,5lt/min  
from  
5 lt/min**

**Water saving  
2.000m<sup>3</sup>/year**



- Through the SCADA (Supervisory Control and Data Acquisition) System, the electrical values of the transformers, power generators and UPSs are remotely monitored and recorded and the previous reports can be reviewed. Thus, expensive resources are used more efficiently.
- Newly built buildings are being integrated to the SCADA system.



Energy-efficient, environment friendly products are used in lighting.

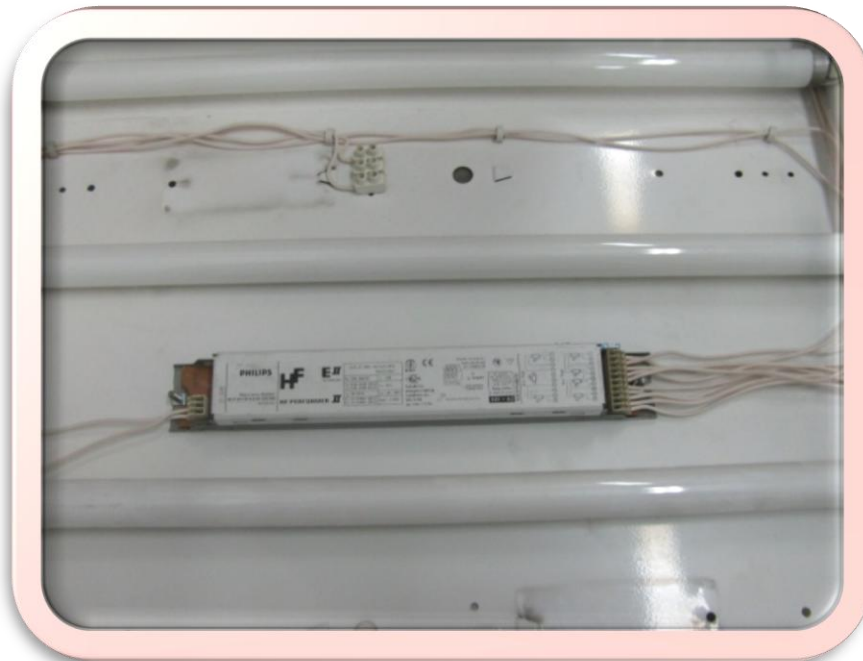
- In environmental lighting; armatures with SOX 90 sodium vapor lamps,
- In wide and high ceiling areas such as hallways 2x36, 2x58, 2x80W fluorescent armatures,
- In office spaces; 4x18W and 4x14W fluorescent armatures are used.



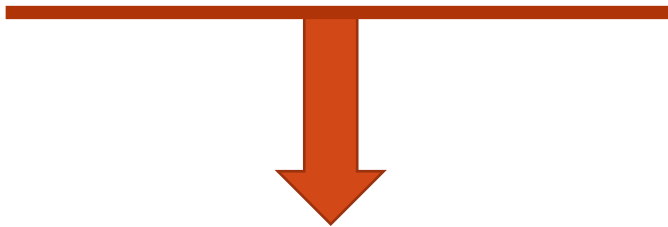
- In lighting, electronic ballasts are used rather than magnetic ballasts.



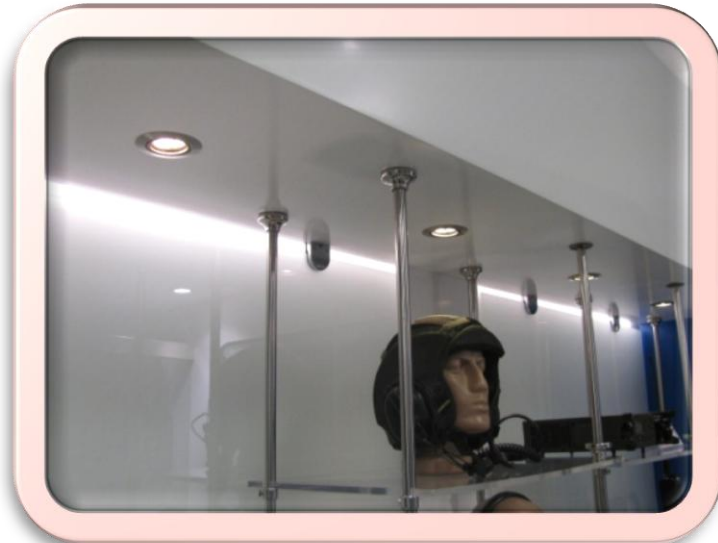
30% energy saving.



- The halogen lamps with high energy consumption that are applied previously on special places are replaced with LED products.



90% energy saving



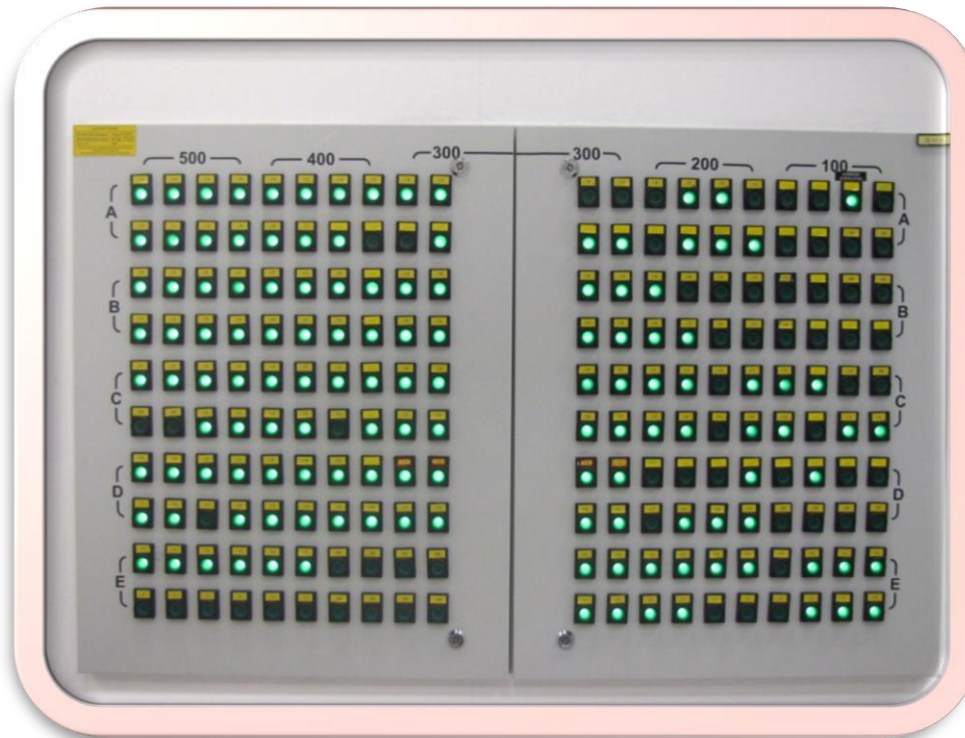
- ◎ Test practices still continue for using LED products in environmental lighting.
- ◎ The luminosity level provided by OX 90 bulbs could not be achieved by LED lamps yet.
- ◎ The luminosity level is monitored through outdoor measurements.



- For ensuring savings in lighting the public areas, motion sensors are used which provided approximately 75% energy saving.
- In parking lot lighting systems, in garden and exterior surface lighting systems, the use of photocell and adjusted timing provided approximately 65% energy saving.



- In wider areas, the lighting control is made through dividing those areas into zones (Zoning/Cell Control).
- Thus; the lighting units of the working section at that location can be controlled independently.



- The transformers, power generators and UPSs that form the power infrastructure are installed with back-ups and Coupling System is installed to be operated in case of failure.
- Consequently; the use of resources are provided in an efficient way.



- The oil immersed transformers at the plant are being replaced with cast resin transformers within the course of renewing and modernization practices.



Meanwhile, the elimination of some risks of the oil-immersed transformers provide advantages in terms of environmental and occupational health and safety



- Ownership values of the Corporate Source Planning System's new and old equipment for a total period of 5 years have been analyzed and the old equipment are decided to be replaced with new ones.



- ◉ 5 years electricity consumption cost\*
- ◉ Cost of new equipment + 2 years maintenance

\*: The cost of the 5-years electricity consumption of the old equipment is 13 times more of the cost of the 5-years electricity consumption of the new equipment.

# CONCLUSION

- By continuously providing the infrastructure and support services required/to be required by all units within the facility in such a manner that they are;
  - timely,
  - uninterrupted,
  - at the desired quality standards,

the productivity will also be enriched.