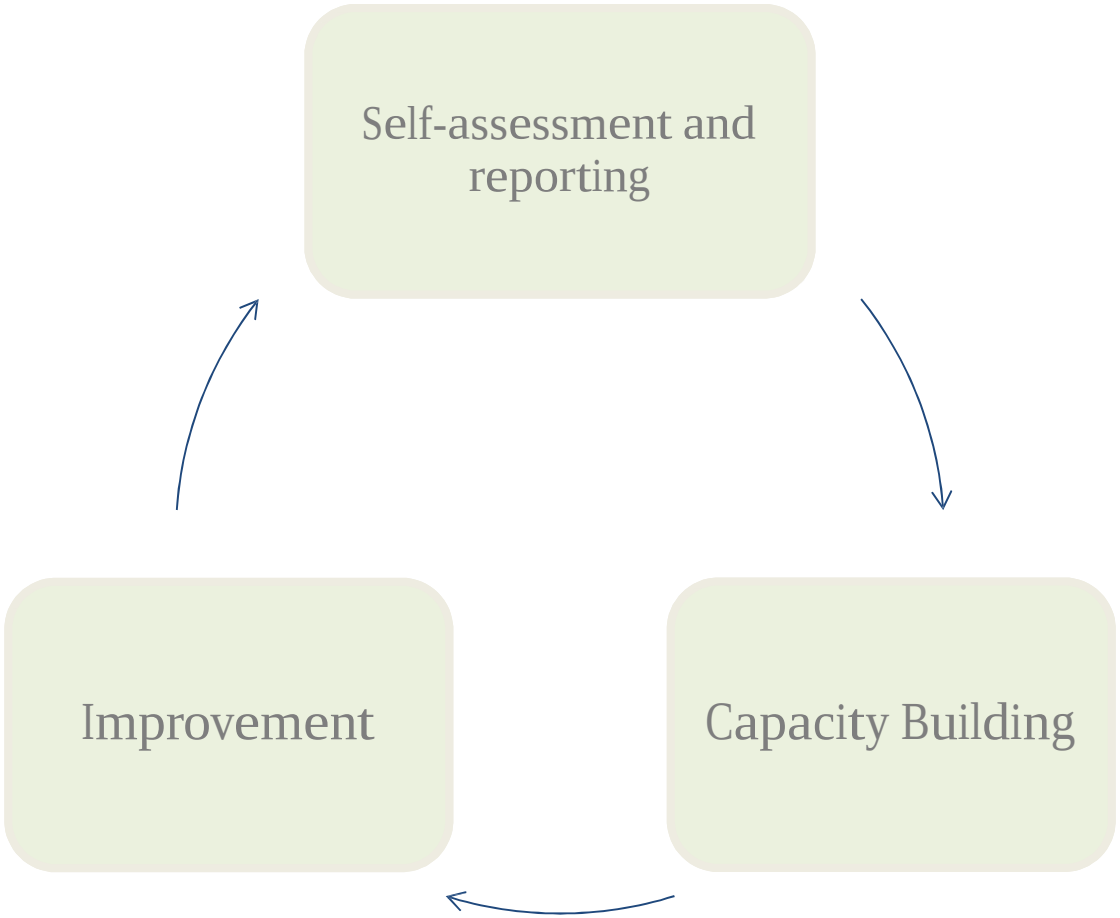
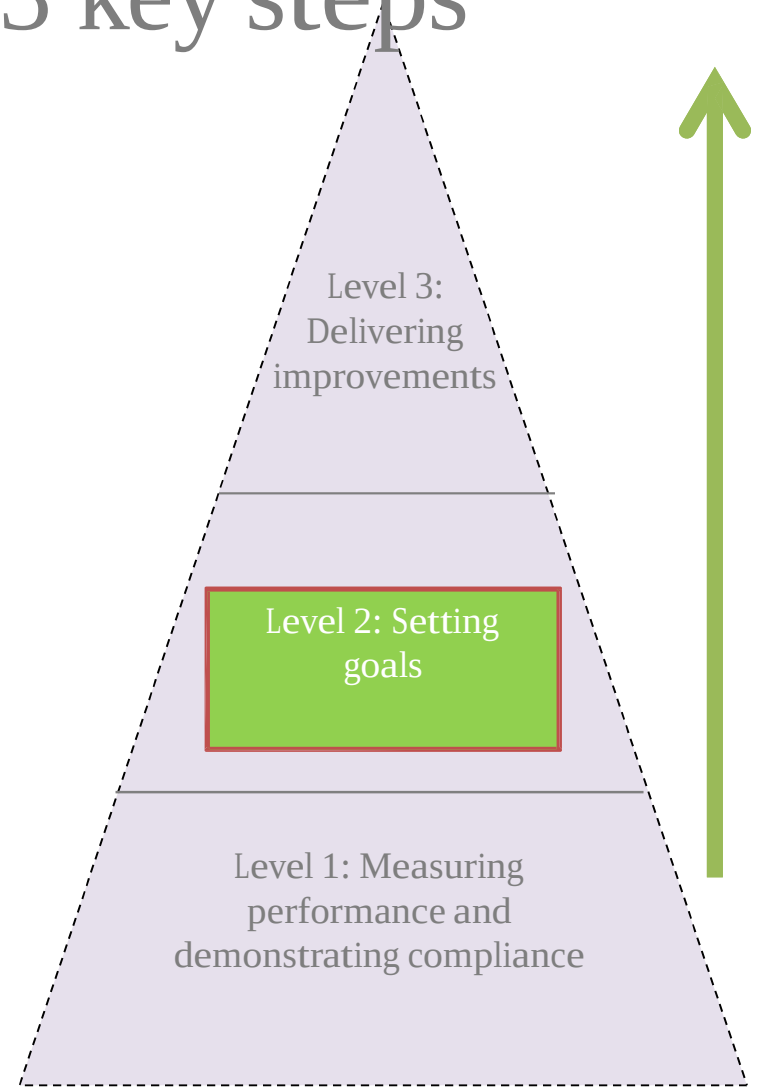
Drive suppliers' Continuous Improvement through 3 key steps





How to set & achieve a target

- Measure/calculate the consumption
- Find method/technology to reduce consumption
- Estimate savings using new method/technology
- Implement the new method/technology
- Measure improvements

Target Requirements:

Goal:

Brief description of the target that is set.

Actionplan:

Description of the technology/method that will be used and how it will impact in achieving the target.

Steps to be taken to achieve the target.

Timelines:

Start and End dates

Calculation:

Measurement/study of the current consumption/trends. Estimation in saving due to the adoption of new technology/method. Saving:

Approximate saving that will be achieved from the action plan based on calculation.

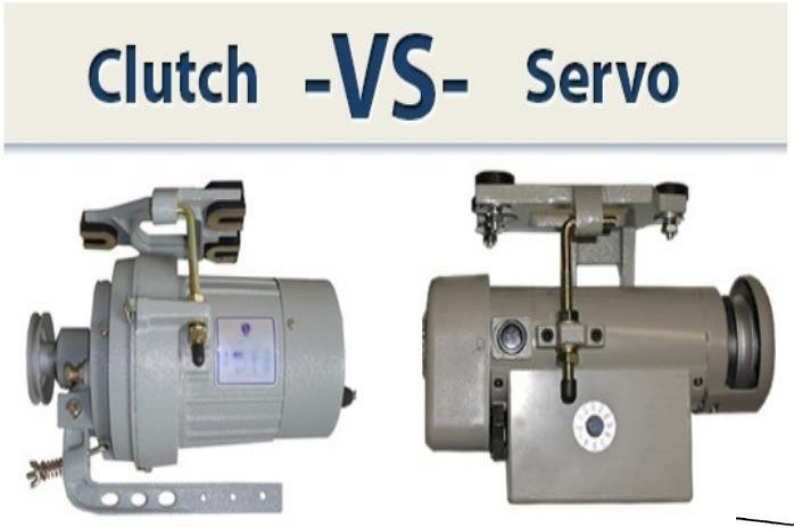
Responsible:

Name of person responsible for the action plan

Measure Consumption

- Using meters, invoices and estimates we can measure Consumption.
- Sub-metering can help giving accurate savings.

Find method/technology to reduce consumption



Energy Use

SETTING ENERGY TARGET

WHAT IS IT?

C

– A formal target here refers to a quantified performance requirement of the site's annual Energy use of an energy source. A formal target must:
1) Include a definite start date Jan-2016 and the performance level (i.e. annual energy use or "baseline") at start date;
2) include an end date of the target, meaning the intended completion of the required reductions;
3) include an exact reduction quantity, expressed in percentage;

– 4) be relevant to reducing the site's energy use; and,

– 5) Frequency of reviewing the target.

Benefits of setting energy target

– Provide a clear goal to improve energy performance of facility and incentives to implement improvement measures
– For external and stakeholders communications in regards to environmental impact of facility
– Provide a benchmark to measure and track on-going energy performance

NORMALISED AND ABSOLUTE TARGETS

- To calculate a normalized value, measure utility/pollution generated in a given time period and divide by the chosen business metric. For example, a normalized waste generation can be calculated as follows: 10,000 kg waste ÷ 5,000 garments = 2kg waste/garment.
- Normalisation metric is often business metric (e.g. units or mass of production, unit revenue, unit gross sales, unit turnover, full-time employee equivalent, square foot)

	Absolute	Normalised
Description	Target measured in absolute energy use, based on historical data.	Target measured in absolute energy use normalised by normalisation metric
Advantages	Easy to calculate and understand; reflect total consumption level of facility	Take into account production fluctuations on energy use; provide internal and/or external benchmarking on a fair basis; unaffected by organic growth or decline of facility
Limitations	Sensitive to external impacts on energy use(e.g. production fluctuations, facility's organic growth or decline); difficult for external benchmarking	Difficult to justify for base load energy consumption; finding the best normalisation metric could be complex if energy use is subject to more than one external impact factors
Applicable	For a constant process (such as lighting that is on 24/7 for safety reasons) or if required for regulatory purposes (as with the baseline year).	Where output and one or two other variables are the major sources of variation in performance, and a simple basis for comparison or identification of non-conformities is required.
Not Applicable	Processes that are subject to variation, such as most systems at generation sites.	Where changes in other variables can make the past energy intensity a poor predictor of performance, or where the data is of insufficient quality or frequency to develop a meaningful intensity baseline.
Example	Total annual energy consumption	Total energy consumption / production unit (kg of garment)

ENERGY REDUCTION ACTION PLAN

WHAT IS IT?

- Key elements of a good action plan
  - Assigned responsibilities for implementation of opportunities
  - Timetable for implementation
  - Process for reviewing progress against targets
  - Prioritized list of energy saving opportunities including management and technical actions

ENERGY REDUCTION ACTION PLAN

Category	Measure	Description of improvement measure	Estimated annual savings	Total energy cost savings (Rs/y)	Estimated investment	Expected project start date	Expected project completion date	Responsible person & title	Progress status
LED Lighting	Install individual switch for better zoning control Turn off lights during break time (cutting room)	Individual lighting switch for each cutting table has installed. Will switch off non-usable table during OT period	10044 kWh/y (Approx)	62775/-	150000/-	Jan-2016	Dec-2017	BanuPrasad Group Manager	80% Completed (200)
LED Lighting	Install individual switch for better zoning control Turn off lights during break time (**Sewing room**)	Install individual switch for each team in sewing room - need to rearrange the network to have 2 teams share one switch	20088 kWh/y	125550/-	300000/-	April-2016	Dec-2017	BanuPrasad Group Manager	80% Completed (400)
LED Lighting	Install individual switch for better zoning control Turn off lights during break time **(Finishing/Packing room)**	Individual lighting switch for each checking table has installed. Will switch off non-usable table during OT period	20088 kWh/y	125550/-	300000/-	July-2016	Dec-2017	BanuPrasad GroupManager	80% Completed (400)

LED Lighting	Install individual switch for better zoning control Turn off lights during break time (**Fabric storage room)**	Individual lighting switch for each checking table has installed. Will switch off non-usable table during OT period	7533 kWh/y	47081/-	112500/-	Jan-2017	Dec-2017	BanuPrasad GroupManager	In progress (150)
LED Lighting	Install individual switch for better zoning control Turn off lights during break time (**Embroidery room**)	Individual lighting switch for each Machine has installed. Will switch off non-usable Machine during working and Check weekly (working in 3 shift)	2511 kWh/y	15694/-	37500/-	Jan-2017	Dec-2017	BanuPrasad GroupManager	10% Completed (50)

Energy Saving Estimation

Target: Improving lighting efficiency by changing of incandescent bulbs to LED.

Calculation:

One Incandescent bulb = 36 kwh

Energy consumption for one year (9 hours daily)

= 36*310*9/1000 = 100.44 kwh/year

Energy consumption for 1 bulb

= 100.44

One LED bulb = 18 kWh

Energy consumption for one year (9 hours daily)

= 18*310*9/1000 = 50.22 kwh/year

Energy consumption for 1 bulb

= 50.22

Savings in Kwh

100.44 (Normal) – 50.22 (LED) = 50.22 kWh

Savings =50.22 kWh

Savings :

Estimated Savings in kWh = 120528 kWh -60264 kWh = 60264 kWh

Estimated Savings per annum in INR (assume 1 kWh = INR 6.25)

= 120528*6.25 = INR 753300/-

60264*6.25= INR 376650/-

Savings: Rs.376650/-

Assume total consumption = 120528 kWh.

Estimated savings = 60264 / 120528 = 50%

ROI:

Cost of 1200 LED bulbs = 1200*750 = INR 900000/-

ROI = Investment/saving per month

=

900000/31387=28 months

Approx. 2.4 years

Target - Energy

Goal:

- Improving lighting efficiency by changing of 1200 incandescent bulbs to LED.

Actionplan:

Changing the existing incandescent bulbs to LED

Calculation:

- As shown in the previous page*

Saving:

Approximate saving will be 9 lakhs per annum with an ROI of 2.4 yrs.

Project Timelines:

Start: April - 2016 - March 2018 (Approx.)

Responsible:

Banuprasad R

(GM – Head of Compliance)

Water Use

WATER TARGET

- A formal target here refers to a quantified performance requirement of the site's annual water use of a particular water source (e.g., mains, surface water, groundwater, recycled water etc.). A formal target must:

  1) Include a definite start date (i.e., "baseline") of target, the measurement unit, and the baseline consumption (i.e. m^3/year at 2016 baseline)

  2) Include an end date of the target, meaning the intended completion of the required reductions; and

  3) Include an exact reduction quantity, expressed as a number (e.g. reduce by 1 million m^3/ 100K USD) or a percentage (e.g. reduce by 5%).

- 4) be relevant to reducing the site's water use (e.g. focuses on the most significant water uses at the site)

- Staff should be trained and made responsible for delivering the targets; and

- Typically, the targets are reviewed at least annually.

Water Saving Estimation

Target: improving water use efficiency by changing of 60 normal taps to push type taps in hand wash area.

Calculation:

Normal tap consumption based on study: 2.8 litres/minute. Consumption per person (Assume 1.5 minutes usage per person): 2.8*1.5 = 4.2 litres. Total Hand Wash Consumption (500 workers)

= 500*4.2 = 2100 litres.

Push taps usage (0.5 minute usage per person)

= 2.8*0.5 = 1.4 liters/person

Total push taps consumption (500 workers):

= 500 * 1.4 = 700 litres

SavingsCalculation:

Estimated Savings in litres = 2100-700 = 1400 litres

Estimated Savings in INR (assume 1 litre = INR 0.25)

= 1400*0.25 = INR 350/day Assume total consumption = 4200 litres Estimated savings = 1400/2100 = 66% / day

ROI:

Cost of 60 taps = 60 * 250 = INR 15000/-

ROI = 15000/ (350*26) = 2months

ROI = 2 months

Target - Water

Goal:

Improving water use efficiency by changing of 60 normal taps to push type taps in hand wash area.

Actionplan:

Changing the existing 60 normal taps in the hand wash area to push button taps.

Calculation:

As shown in the previous page*

Timelines:

Start: April-2017 End: Dec-2017

Saving:

Approximate saving will be INR 109200/- per annum with an ROI of 2 months.

Responsible:

Banuprasad R

Wastewater

(Under progress)

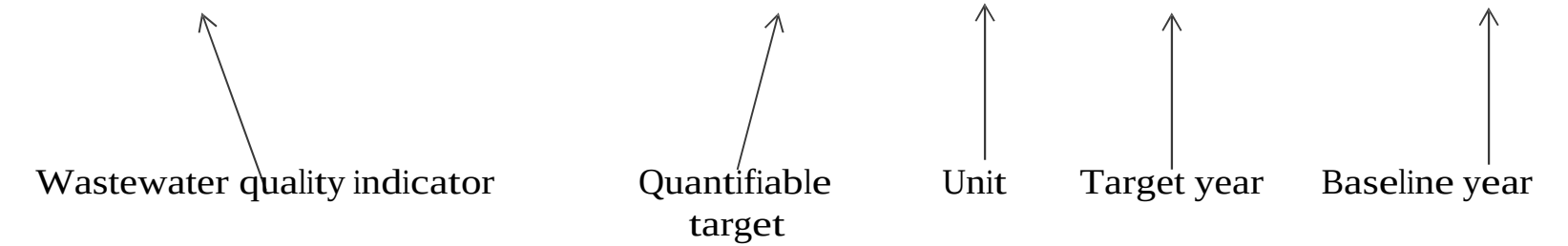
SETTING WASTEWATER QUALITY IMPROVEMENT TARGETS

WHAT ARE WE LOOKING FOR?

– Formal target, at least reviewed annually

(the following example is a absolute reduction target)

Reduce BOD level of wastewater discharge by 25% per garment by 2017 compared to a 2016 baseline



Target should be reviewed annually and accompanied by an action plan.

Meeting legal standards are not a wastewater quality improvement "Beyond compliance" is expected!

Actionplansetting

Addition of micro organisms which aid in the aeration process

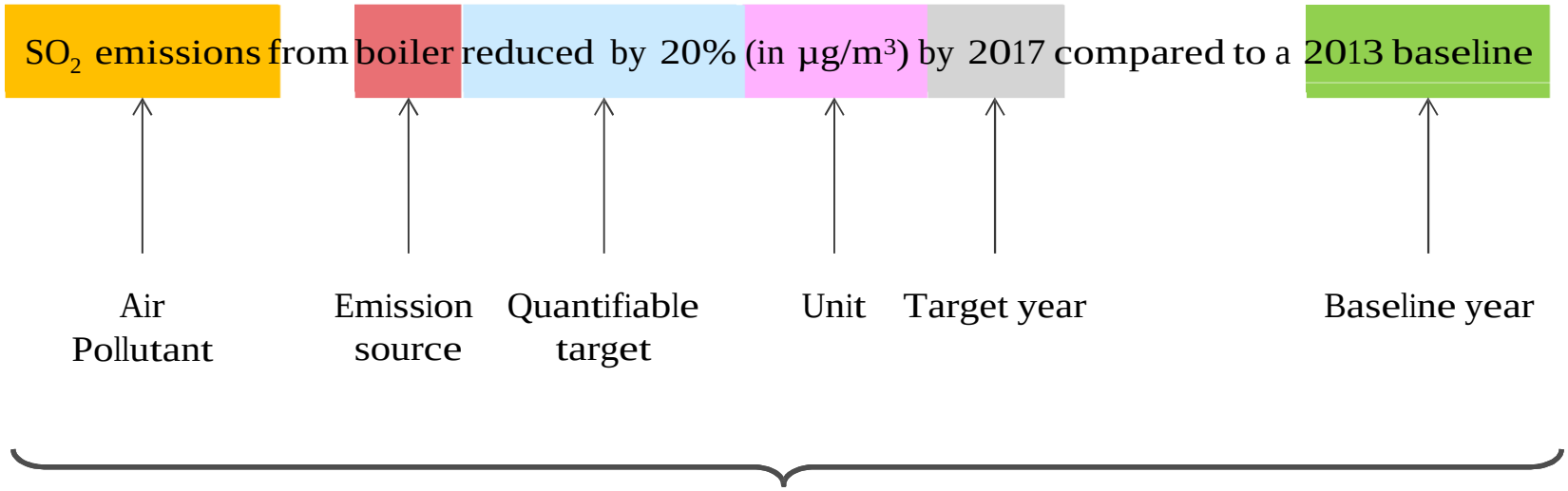
AIR EMISSIONS

AIR EMISSION TARGET

WHAT ARE WE LOOKING FOR?

– Formal target, at least reviewed annually

(The following example is a absolute reduction target)



Target should be reviewed annually and accompanied by an action plan.

Actionplan-typicalmeasurestoreduceair emission

Installation of scrubber, fuel switch (coal to compressed biomass)

Thank you!

We look forward to working together!

By,

Banuprasad R
GM - Head of Compliance
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