# 1st National Urban Water Awards 2008

## CATOGEGORY OF INITIATIVE: TECHNICAL INNOVATION

# Re-Engineering In Water Supply Route (s)

# and

# Other Energy Saving Measures in Water Supply System

# INNOVATION

- **Source of Innovation is Vision**
- **For being Innovative one require being courageous**
- **For being courageous one has to acknowledge fear and then ...**
- **ACTION**

# WHY

# ENERGY CONSERVATION

# IN

# SURAT MUNCIPAL CORPORATION?

# Vision behind the energy efficiency in SMC

- To provide the services at optimum cost.
- To divert funds in development activity.
- To help in protecting the environment.
- To set an example for motivating other organisations and citizens at large.

**HENCE**

# Energy Efficiency Cell

**WAS**

**ESTABLISHED**

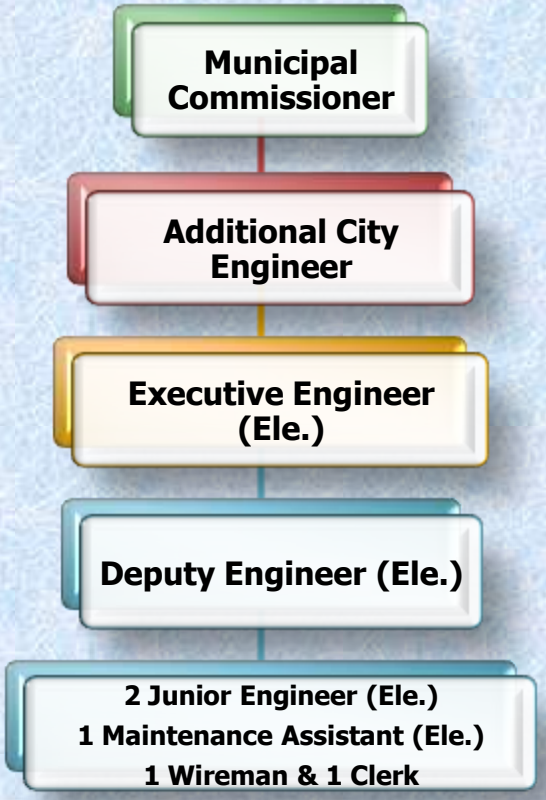
**IN**

**NOV-2001**

# *Energy Efficiency Cell*

- *Two Electrical Engineers backed with 13 years of long experience in the field and one of them has passed exam of Energy Auditor conducted by BEE*

***Organogram of Energy Efficiency Cell : -***



# *Energy Efficiency Cell*

## Instruments Possessed by EEC

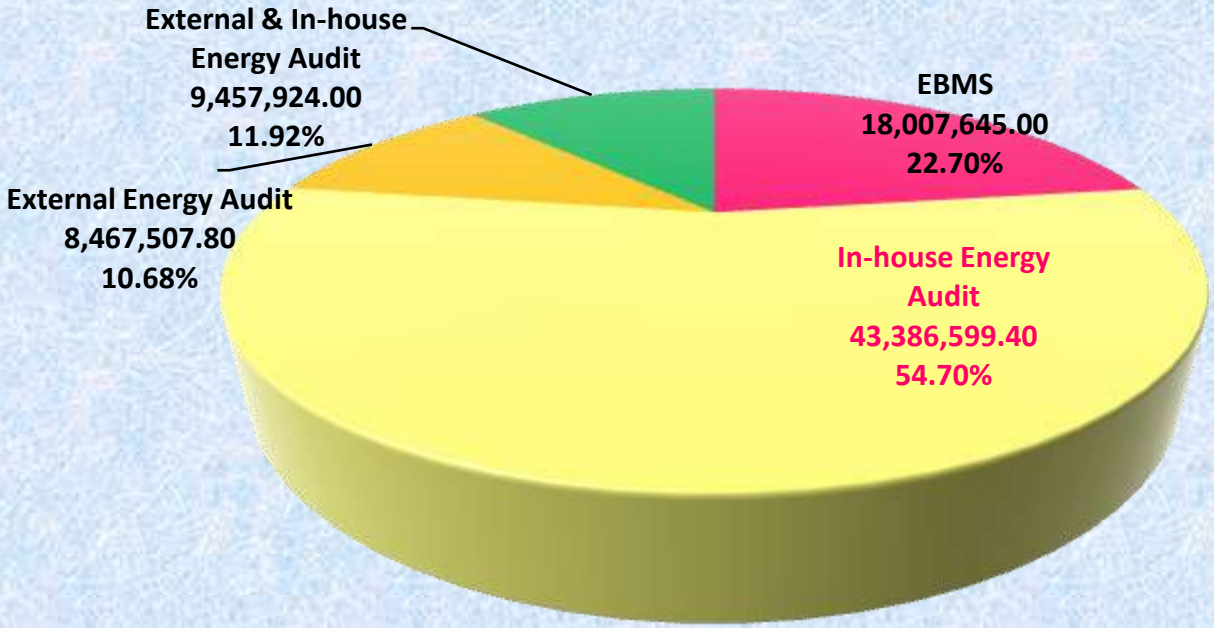
- Power Quality Analyzer for measurement of 3– Phase unbalanced load (Fluke make)
- Power Quality Analyzer for measurement of 3– Phase balanced load. (elcontrol make)
- Ultrasonic Portable Flow meter (Ultraflux make)
- Pressure Gauge (Altop make)
- Techometer (Meco make)
- Lux Meter (Meco make)
- Multimeters & Clamp on Meters (Rishabh/ Meco make)
- Others

## ACTIVITY OF EEC :

- To conduct in house Energy Audit
- To organise External Energy Audit as per Act/ Order of Government
- To identify energy conservation projects and feasibility
- To find out sources for procuring power at lowest possible price
- Feasibility study for own power generation
- To protect the interest of SMC in GERC for tariff related maters
- To do scrutiny of file having more than or equal to 30 kW power loading
- To monitor the usages of electricity through Energy Bill Monitoring System

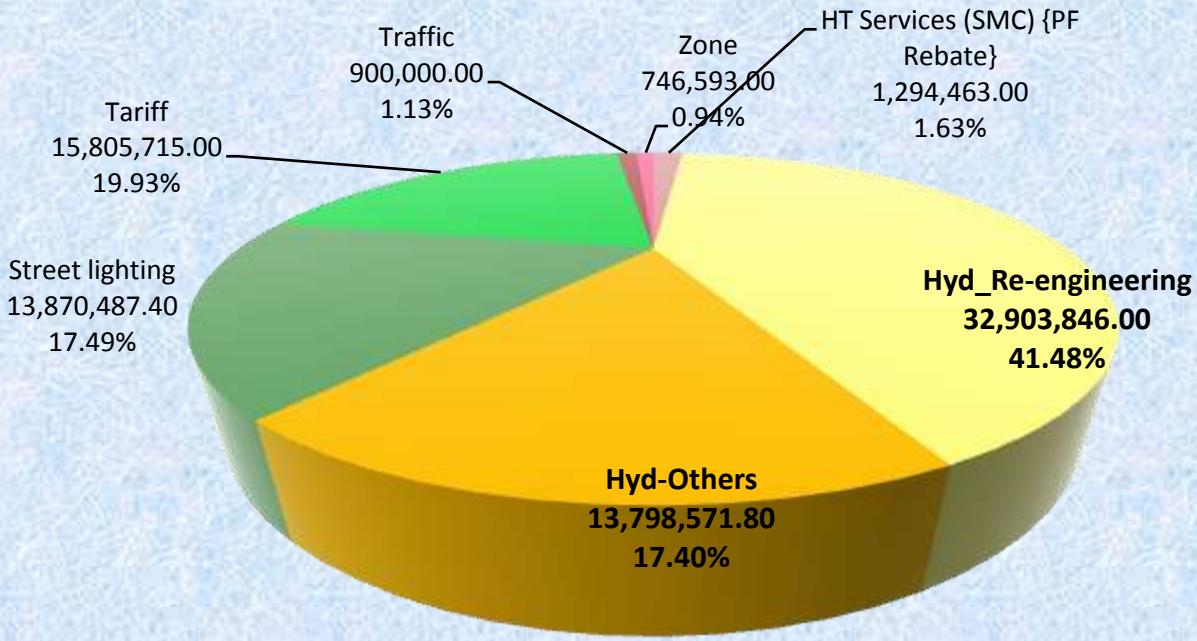
# ACHIEVEMENT IN ENERGY SAVING AREA TILL DATE

| Suggested by/ through | Energy Saving | | | %age |
|---|---|---|---|---|
| | KWH/ annum | Recurring (Rs./ annum) | One Time (Rs.) | |
| EBMS | | 18,007,645.00 | 2,638,897.00 | 22.70% |
| **In-house Energy Audit** | **11,319,971** | **43,386,599.40** | | **54.70%** |
| External Energy Audit | 1,830,064 | 8,467,507.80 | | 10.68% |
| External & In-house Energy Audit | 2,300,088 | 9,457,924.00 | | 11.92% |
| **Total** | **15,450,123** | **79,319,676.20** | **2,638,897.00** | **100.00%** |



# ACHIEVEMENT IN ENERGY SAVING AREA TILL DATE

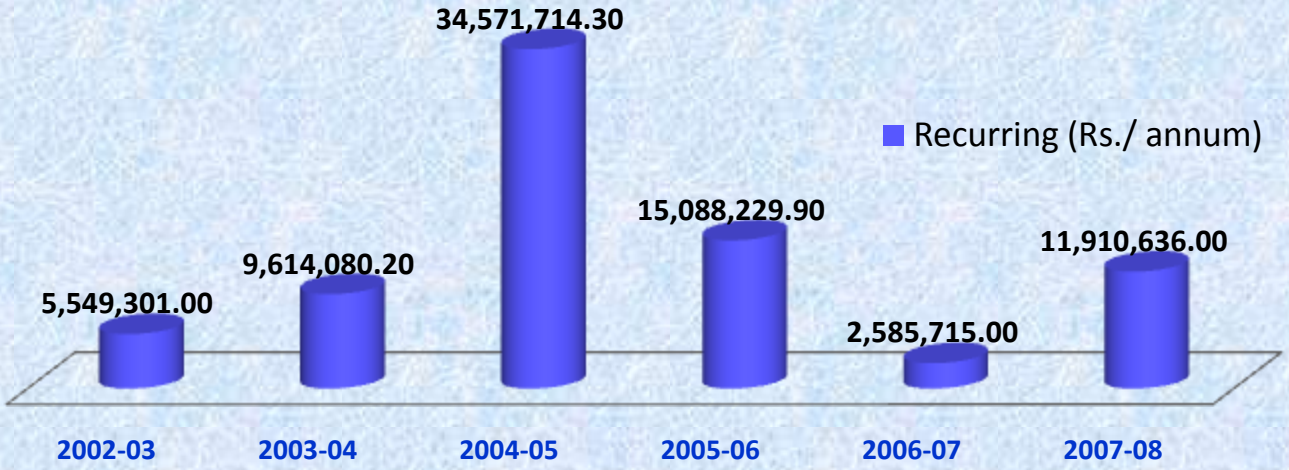
| Type/ Department | KWH/ annum | Recurring (Rs./ annum) | One Time (Rs.) | %age |
|---|---|---|---|---|
| HT Services (SMC) {PF Rebate} | | 1,294,463.00 | | 1.63% |
| Hyd_Re-engineering | 8,174,046 | 32,903,846.00 | | 41.48% |
| Hyd-Others | 2,731,311 | 13,798,571.80 | 2,087,001.00 | 17.40% |
| Street lighting | 4,267,843 | 13,870,487.40 | | 17.49% |
| Tariff | | 15,805,715.00 | 551,895.00 | 19.93% |
| Traffic | 276,923 | 900,000.00 | | 1.13% |
| Zone | | 746,593.00 | | 0.94% |
| **Total** | **15,450,123** | **79,319,676.20** | **2,638,896.00** | **100.00%** |



# Summary of Energy Saving & Tariff Related Benefits to SMC

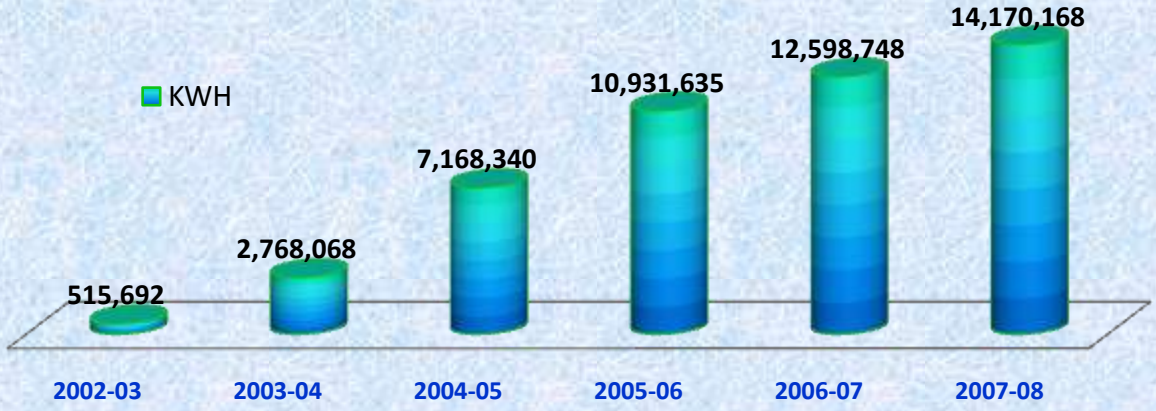
| Year | Energy Saving Activities | | | Investment Made (Rs.) | Cumulative Energy Saving in the Year | |
|---|---|---|---|---|---|---|
| | KWH/ annum | Recurring (Rs./ annum) | One Time (Rs.) | | KWH | Rs. |
| 2002-03 | 1,537,528 | 5,549,301.00 | 187,079.00 | 8,778,650.00 | 515,692 | 2,082,247.00 |
| 2003-04 | 2,558,711 | 9,614,080.20 | 1,968,322.20 | 2,640,500.00 | 2,768,068 | 11,429,427.17 |
| 2004-05 | 4,729,643 | 34,571,714.30 | | 8,506,060.88 | 7,168,340 | 29,077,435.83 |
| 2005-06 | 3,772,866 | 15,088,229.90 | | 14,589,538.00 | 10,931,635 | 57,820,178.48 |
| 2006-07 | | 2,585,715.00 | 483,495.33 | 30,000.00 | 12,598,748 | 66,929,582.81 |
| 2007-08 | 2,851,375 | 11,910,636.00 | | 18,297,824.78 | 14,170,168 | 74,076,459.40 |
| **TOTAL** | **15,450,123** | **79,319,676.40** | **2,638,896.53** | **52,842,573.66** | **48,152,651** | **241,415,330.69** |

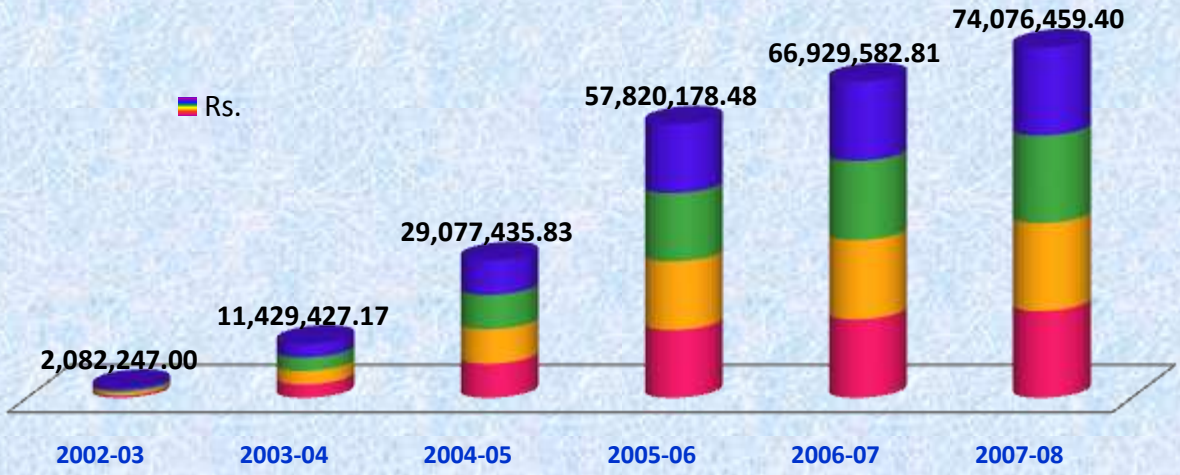
# *Energy Saving Activities Implemented Year-wise*

# Summary Energy Saving & Tariff Related Benefits to SMC

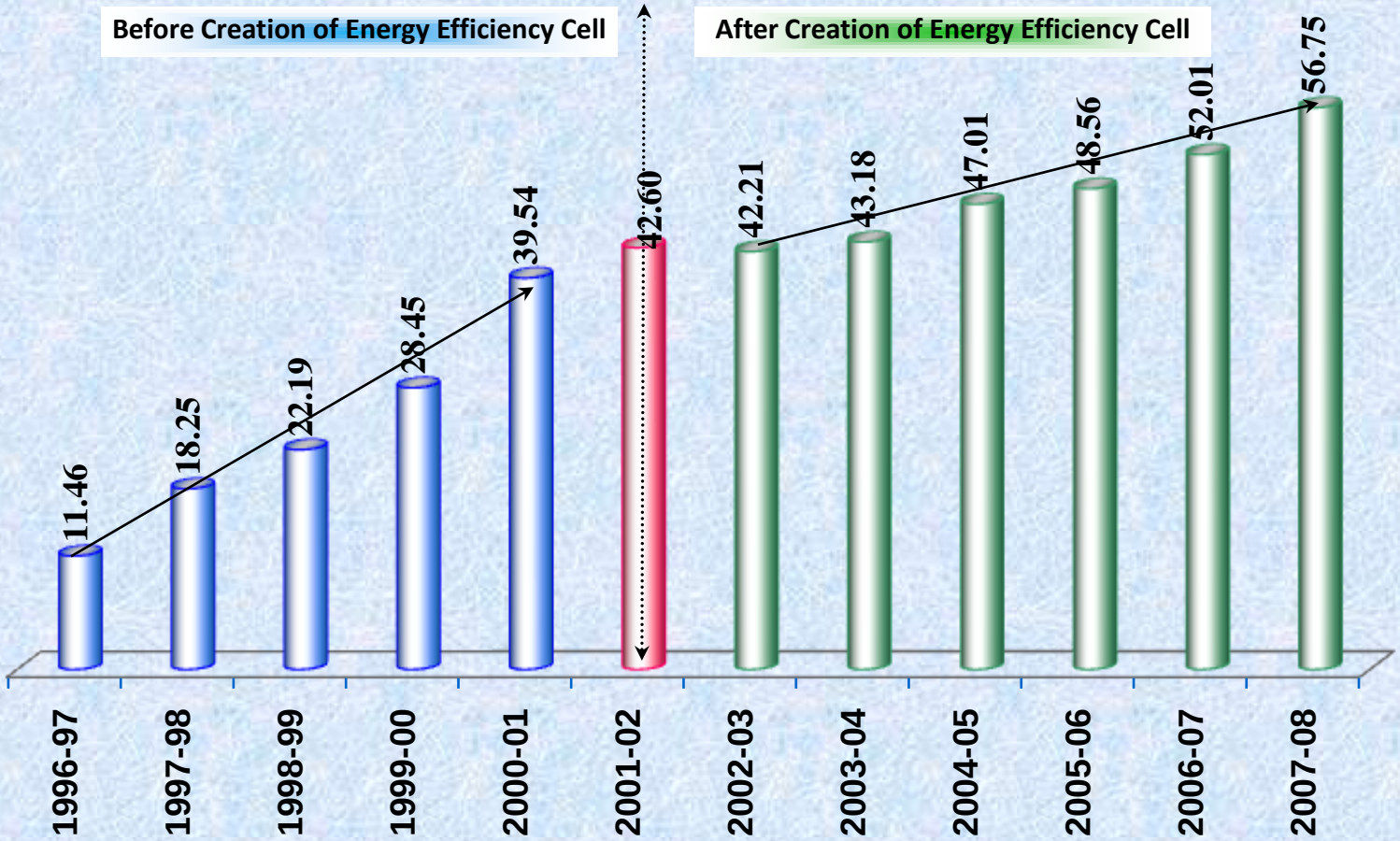
## *Cumulative Energy Saving in the Year-wise*



# EFFECT OF ENERGY CONSERVATION ELECTRICITY BILL OF SMC

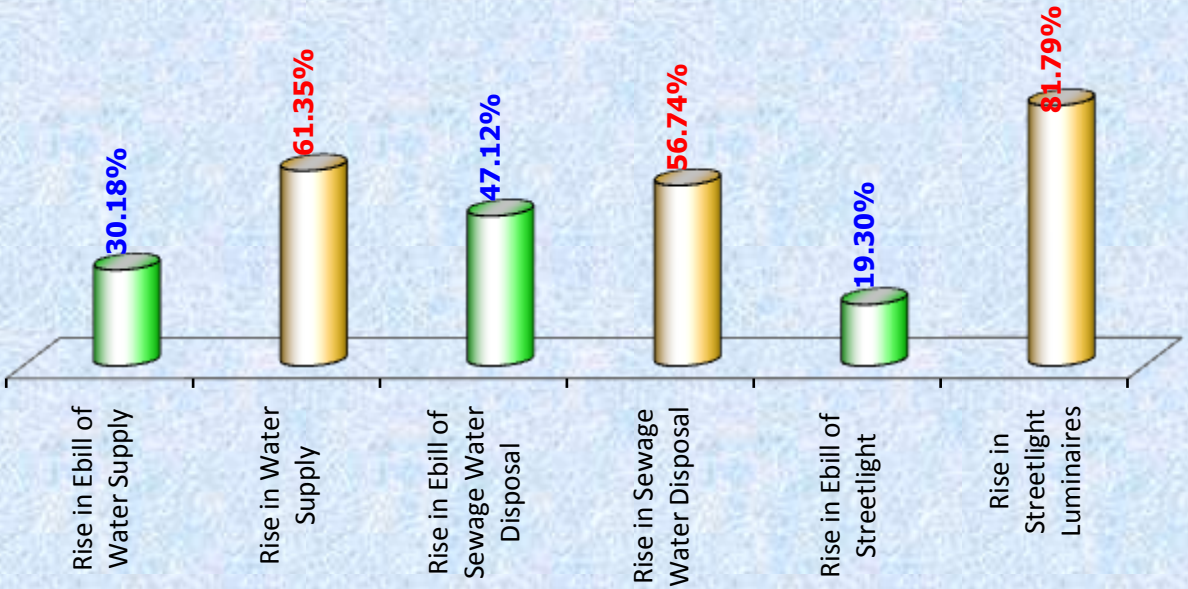
SMC's Electricity Expenditure {in Crore Rs.} **(1995-96 TO 2007-08)**



# Comparison of Rise in Volume of Services with Rise in Electricity Bills

(Year 2001-02 & 2007-08)

| Sr. No. | Year | Total | Water Supply | | Sewage Disposal | | Streetlight | |
|---|---|---|---|---|---|---|---|---|
| | | | Electricity Bill Amount (in Lacs Rs.) | Average Water Supplied (MLD) | Electricity Bill Amount (in Lacs Rs.) | Average Sewage Water Disposed (MLD) | Electricity Bill Amount (in Lacs Rs.) | Nos. of Luminaires |
| 1 | **2001-02** | **4260.53** | **2599.23** | **406.13** | **783.25** | **284.29** | **543.51** | **38,463** |
| 2 | **2007-08** | **5674.80** | **3383.56** | **655.31** | **1152.33** | **445.61** | **648.43** | **69,923** |
| ** | **% Rise** | **33.19%** | **30.18%** | **61.35%** | **47.12%** | **56.74%** | **19.30%** | **81.79%** |

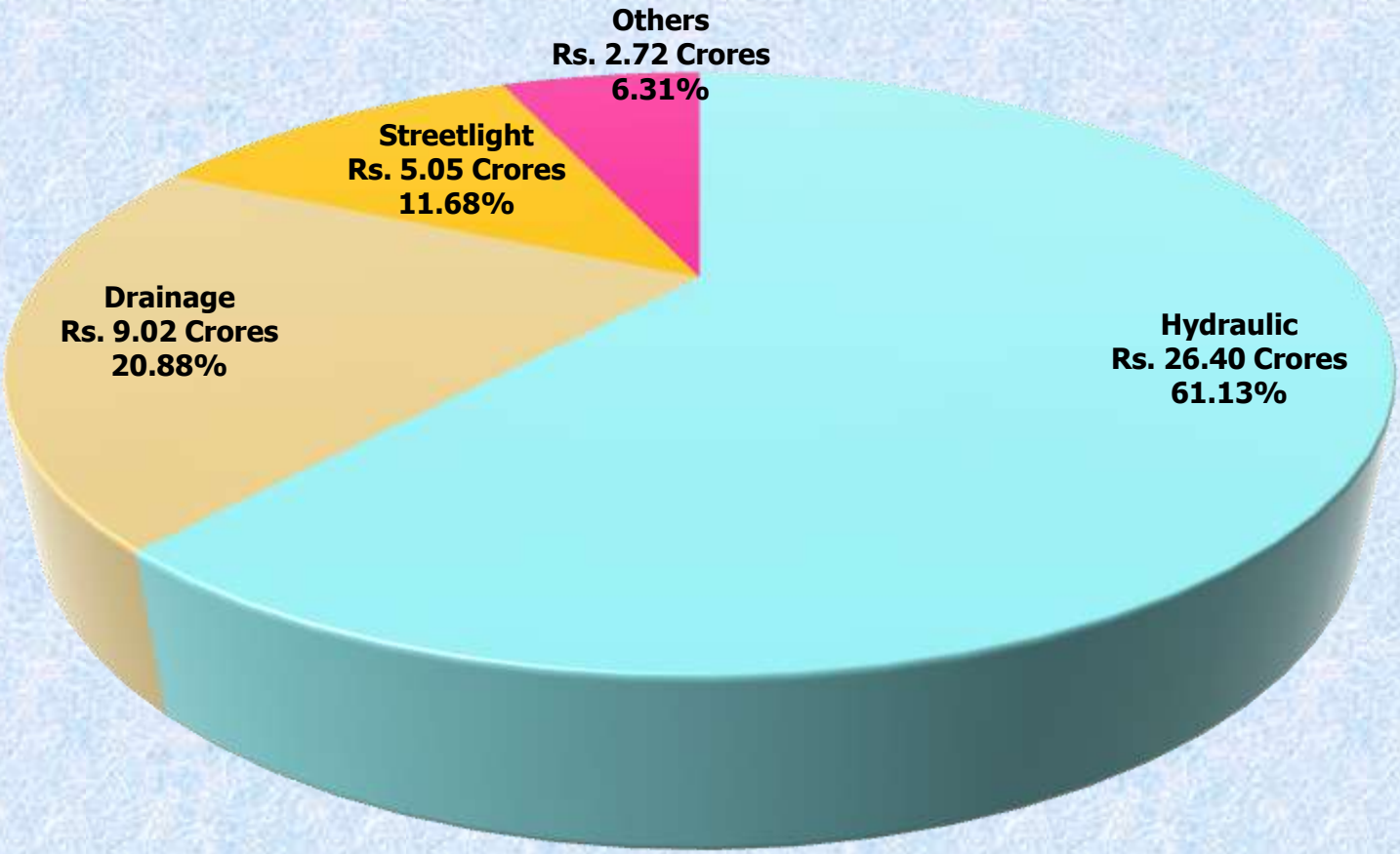


# Energy Consuming Municipal Services

- **Water Supply**
- **Drainage**
- **Streetlight**
- **Others** (Hospitals, Amenities Buildings etc.)

# Energy Usages Scenario of SMC

## Energy Bill 2003-04



# HENCE

# WATER SUPPLY SYSTEM

# WAS THE

# FIRST PLACE TO FOCUS UPON

# Situation before the initiative (Prior to 2003-04)

- Population:
  - Increased From 14.93 (1991) to 24.33 lacs (2001)
- Water Demand:-
  - Increased from 199 MLD (1996-97) to 479 MLD (2003-04)
- Energy Bill:-
  - Increased From Rs. 8.29 Crores (1996-97) to Rs. 26.40 Crores (2003-04)
- Augmentation in water treatment capacity:-
  - 4 WTPs were constructed to cater increased water demand

| | | |
|---|---|---|
| Katargam Water Works | 1997 | 120 MLD |
| Katargam Water Works | 1999 | 120 MLD |
| Sarthana Water Works | 2001 | 120 MLD |
| Rander Water Works | 2003 | 200 MLD |

# Water Supply & Electricity Bill

| Financial Year | Average Water Supply (MLD) | Electricity Bill for Water Supply (Crore Rs.) | Electricity Bill for Other Services etc. (Crore Rs.) | Electricity Bill of SMC (Crore Rs.) | % of Water Supply |
|---|---|---|---|---|---|
| 1996-97 | 199 | 8.29 | 4.37 | 12.66 | 65.48% |
| 2003-04 | 479 | 26.40 | 16.78 | 43.18 | 61.14% |
| % Rise | 140.70% | 218.46% | 283.98% | 241.07% | ----- |

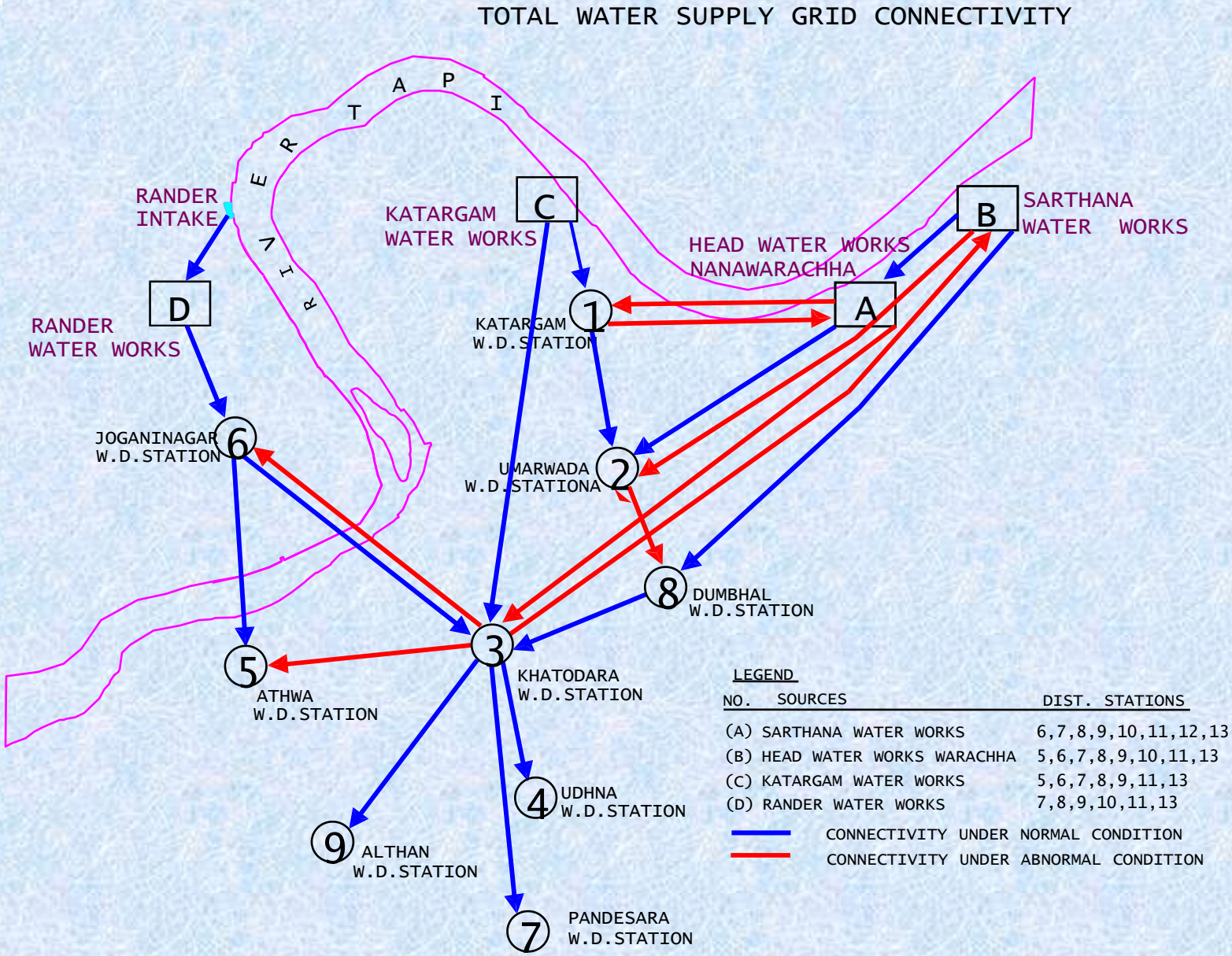
# Water Supply During 2003-04

- Every day 479 MLD water was being supplied
- Grid network consist of;
  - 4 nos. of Water Works having installed water treatment capacity of 628 MLD.
  - 9 nos. of water distribution centers and
  - 4 nos. of pumping station.

# Energy consumption pattern in various stages of Water Supply System

| Stages | Consumption in %age | Remarks |
|---|---|---|
| Raw / Filtered Water Collection from Intake Wells/ Radial Wells | 28% | Not much can be saved as it is fixed head operated system.<br>-However, savings are always identified through ordinary energy auditing and replacement of inefficient machineries. |
| Filtration of raw water including chlorination | 5% | Not much can be saved |
| **Filtered water transmission** | **20%** | **Here was the scope of creativity and innovation.** |
| Filtered water Distribution | 47% | -Not much can be saved as it is fixed head operated system.<br>-However, savings are always identified through ordinary energy auditing and replacement of inefficient machineries. |

# GRID Network of Water Supply System



# Study of Water Supply Transmission Network

## Objective of Study

- To find out the Energy Economical routes for feeding various water distribution stations from Water Works
  - ▶ **in existing condition** as well as
  - ▶ **in the near future**.
- To suggest alternative paths for feeding/ transmission, thereby increase flexibility / interconnection and grid facility as well.
- To determine the ratings of Pumps, Motors and associated accessories in reference to the future planning considering present scenario and optimum energy saving.
- The actions will be created and carried out by the team of Engineers of;
  - ▶ **Water Supply Department**
  - ▶ **Energy Efficiency Cell**

# Study of Water Supply Transmission Network

## Data Collection & Assumptions made :

- Levels of Underground Tanks, inner dia. of pipelines, length of pipelines
- Energy Audit Report of 14 sites and data of pump discharge, head, input power, efficiency of pump and motor.
- Water allocation data & planning
- Total 21 kind of assumptions / data collection were made

► Based on above data and assumptions Specific Energy Consumption of various Transmission Route were worked out.

# Study of Water Supply Transmission Network

## Data Collection & Assumptions made :

- Levels of Underground Tanks, inner dia. of pipelines, length of pipelines
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- Water allocation data & planning
- Total 21 kind of assumptions / data collection were made

► Based on above data and assumptions Specific Energy Consumption of various Transmission Route were found out.

# Study of Water Supply Transmission Network

Total Specific Energy Consumption (KWH/ ML) For Transmitting Water for Each WDS from Each Water Works

| WDS | Katargam WW | Head WW | Sarthana WW | Rander WW | Rander WW (VIA JOG. WDS) |
|---|---|---|---|---|---|
| Khatodara WDS | **142.88** | 319.27 | 214.93 | 207.28 | 240.70 |
| Katargam WDS | **138.81** | 319.27 | 315.59 | ----- | ----- |
| Umarwada WDS | 275.07 | 319.27 | **165.67** | ----- | ----- |
| Dumbhal WDS | 323.32 | 367.52 | **180.39** | ----- | ----- |
| Athawa WDS | 354.13 | 530.52 | 426.18 | **207.28** | 240.70 |
| Joganinagar WDS | 354.13 | 530.52 | 426.18 | **129.17** | ----- |
| Pandesara WDS | **208.29** | 384.68 | 214.93 | 272.69 | 306.11 |
| Althan WDS | **208.29** | 384.68 | 280.34 | 272.69 | 306.11 |
| Udhana WDS | **208.29** | 384.68 | 214.93 | 272.69 | 306.11 |

# Study of Water Supply Transmission Network

## Total Specific Energy Consumption (KWH/ ML) of Existing Route of water Transmission (2004) Before Re-engineering

| Sr. No. | WDS | Route | KWH/ ML | MLD | KWH/ Day (Route) | KWH/ Day (WDS) |
|---|---|---|---|---|---|---|
| 1 | Khatodara WDS | $RW_{KHW}$ ⇨ $WTP_{KHW}$ ⇨ $UGT_{KHW}$ ⇨ $UGT_{KHT}$ | 142.88 | 53.20 | 7,602 | 12,608 |
| | | $RW_{RANW}$ ⇨ $WTP_{RANW}$ ⇨ $UGT_{RANW}$ ⇨ $UGT_{RAN}$ ⇨ $UGT_{KHT}$ | 240.70 | 20.80 | 5,006 | |
| 2 | Katargam WDS | $RW_{KHW}$ ⇨ $WTP_{KHW}$ ⇨ $UGT_{KHW}$ ⇨ $UGT_{KAT}$ | 138.81 | 120.00 | 16,657 | 16,657 |
| 3 | Umarwada WDS | $RW/FW_{SHW}$ ⇨ $WTP_{SHW}$ ⇨ $UGT_{SHW}$ ⇨ $UGT_{HHW}$ ⇨ $UGT_{UMR}$ | 315.59 | 40.11 | 12,658 | 16,774 |
| | | $RW_{HHW}$ ⇨ $WTP_{HHW}$ ⇨ $UGT_{HHW}$ ⇨ $UGT_{UMR}$ | 319.27 | 12.89 | 4,116 | |
| 4 | Dumbhal WDS | $RW/FW_{SHW}$ ⇨ $WTP_{SHW}$ ⇨ $UGT_{SHW}$ ⇨ $UGT_{DUM}$ | 180.39 | 28.00 | 5,051 | 5,051 |
| 5 | Athawa WDS | $RW_{RANW}$ ⇨ $WTP_{RANW}$ ⇨ $UGT_{RANW}$ ⇨ $UGT_{RAN}$ ⇨ $UGT_{ATH}$ | 240.70 | 32.00 | 7,703 | 7,703 |
| 6 | Rander WDS | $RW_{RANW}$ ⇨ $WTP_{RANW}$ ⇨ $UGT_{RANW}$ ⇨ $UGT_{RAN}$ | 129.17 | 45.00 | 5,813 | 5,813 |
| 7 | Pandesara WDS | $RW_{KHW}$ ⇨ $WTP_{KHW}$ ⇨ $UGT_{KHW}$ ⇨ $UGT_{KHT}$ ⇨ $UGT_{HIN}$ | 208.29 | 25.16 | 5,241 | 8,252 |
| | | $RW_{RANW}$ ⇨ $WTP_{RANW}$ ⇨ $UGT_{RANW}$ ⇨ $UGT_{RAN}$ ⇨ $UGT_{KHT}$ ⇨ $UGT_{PAN}$ | 306.11 | 9.84 | 3,011 | |
| 8 | Althan WDS | $RW_{KHW}$ ⇨ $WTP_{KHW}$ ⇨ $UGT_{KHW}$ ⇨ $UGT_{KHT}$ ⇨ $UGT_{ALT}$ | 208.29 | 6.47 | 1,348 | 2,122 |
| | | $RW_{RANW}$ ⇨ $WTP_{RANW}$ ⇨ $UGT_{RANW}$ ⇨ $UGT_{RAN}$ ⇨ $UGT_{KHT}$ ⇨ $UGT_{ALT}$ | 306.11 | 2.53 | 774 | |
| 9 | Udhana WDS | $RW_{KHW}$ ⇨ $WTP_{KHW}$ ⇨ $UGT_{KHW}$ ⇨ $UGT_{KHT}$ ⇨ $UGT_{UDH}$ | 208.29 | 25.16 | 5,241 | 8,252 |
| | | $RW_{RANW}$ ⇨ $WTP_{RANW}$ ⇨ $UGT_{RANW}$ ⇨ $UGT_{RAN}$ ⇨ $UGT_{KHT}$ ⇨ $UGT_{UDH}$ | 306.11 | 9.84 | 3,011 | |
| *** | Total KWH/ Day | | | | | 83,232 |

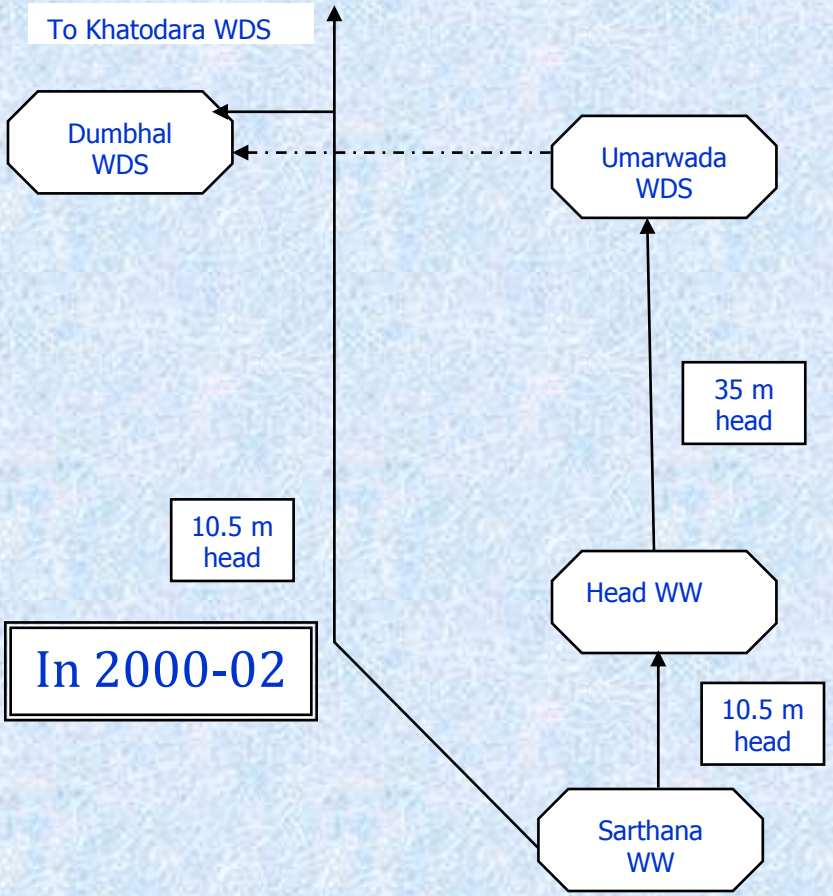
# RE – ENGINEERING OF THE TRANSMISSION ROUTES

| Re-engineered Route | Location | Ordinary routes before initiative (2003-04) | Specific Energy Cons. (KWH/ ML) | Energy Cons. (KWH/ Day) | Re-engineered route | Specific Energy Cons. (KWH/ ML) | Expected Energy Cons. (KWH/ Day) | Net Saving (KWH/ Day) |
|---|---|---|---|---|---|---|---|---|
| I | Umarwada WDS | SWW→HWW→ UMR WDS | 315.59 {40.11 MLD} | 12,658 | SWW→ DUM-UMR WDS | 165.67 {53 MLD} | 8,781 | 7,992 |
| | | HWW→UMR WDS | 319.27 {12.89 MLD} | 4,115 | | | | |
| II | Athawa WDS | RWW→JOG WDS→ATH WDS | 240.7 {32 MLD} | 7,702 | RWW→ATH WDS | 207.28 {32 MLD} | 6,633 | 1,069 |
| | Khatodara WDS | RWW→JOG WDS→KHT WDS | 240.7 {20.8 MLD} | 5,007 | RWW→KHT WDS | 207.28 {15.96} | 3,308 | 1007 |
| | | KWW→KHT WDS | 142.88 {53.20 MLD} | 7,601 | KWW→KHT WDS | 142.88 {58.04} | 8,293 | |
| III | Katargam WDS | KWW→KAT WDS (12.4 m head) | 133.38 {215.85 MLD} | 28,790 | KWW→KAT WDS (9 m head) | 117.32 {215.85 MLD} | 25,323 | 3,467 |
| | Khatodara WDS | KWW→KHT WDS (26.4 m head) | | | KWW→KHT WDS (9 m head) | | | |
| IV | Udhana WDS | KWW→KHT WDS→UDH WDS | 183.84 {31 MLD} | 5,699 | KWW→UDH WDS | 128.05 {32 MLD} | 4,098 | 1,601 |
| | Pandesara WDS | KWW→KHT WDS→PAN WDS | 183.84 {27 MLD} | 4,964 | KWW→PAN WDS | 128.07 {27 MLD} | 3,458 | 1,506 |
| ** | **Total** | | | **76,536** | | | **59,894** | **16,642** |

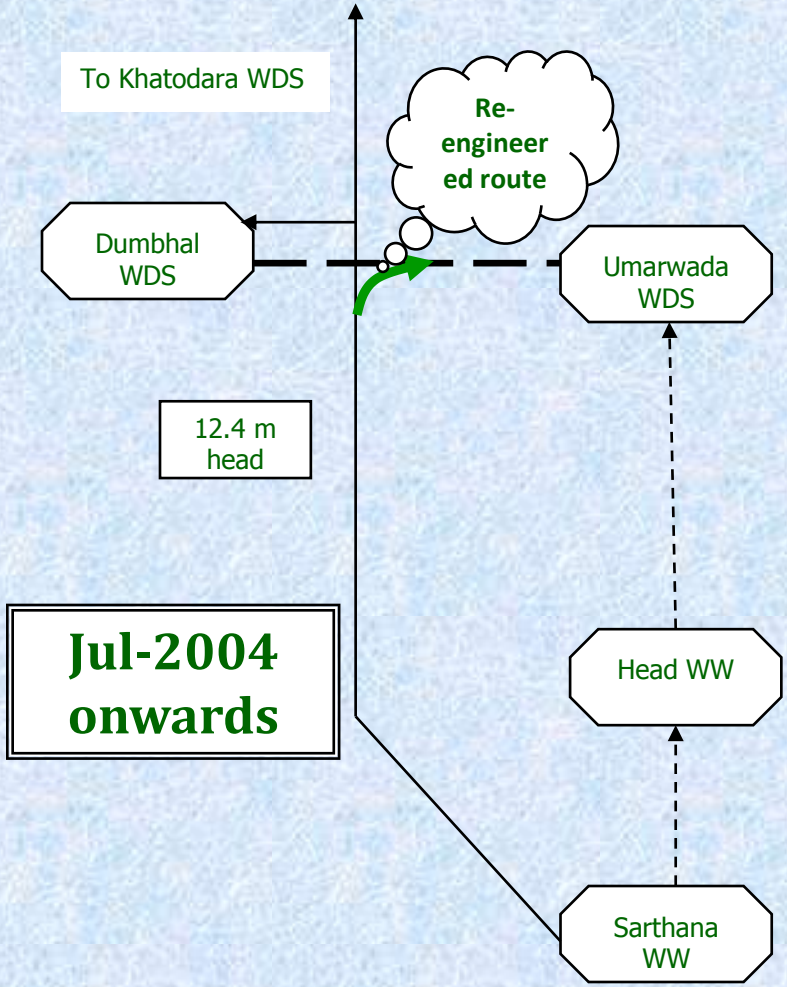
# ACTION

# RE – ENGINEERED ROUTE – (1)

**BEFORE RE-ENGINEERING**

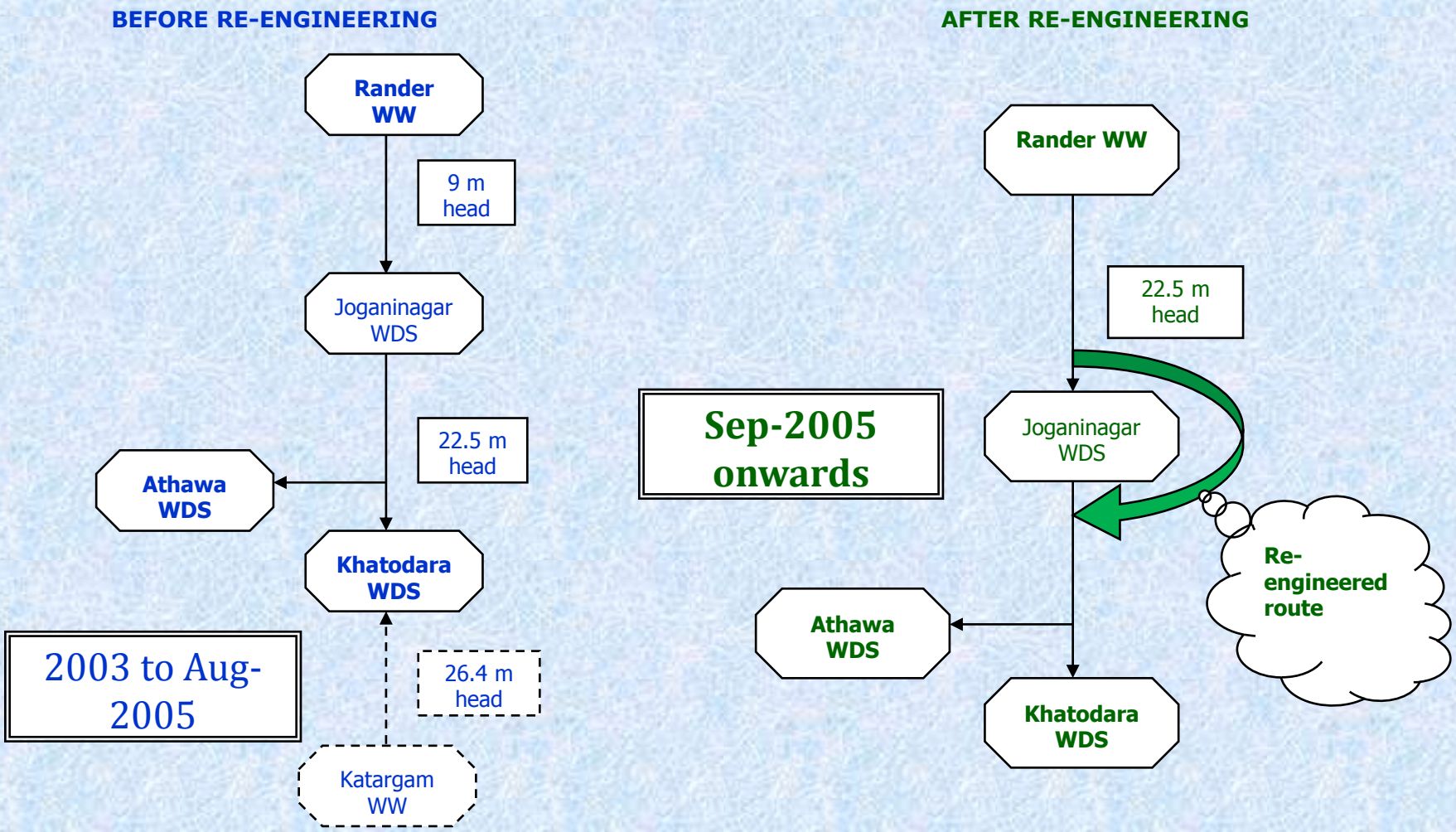



**AFTER RE-ENGINEERING**



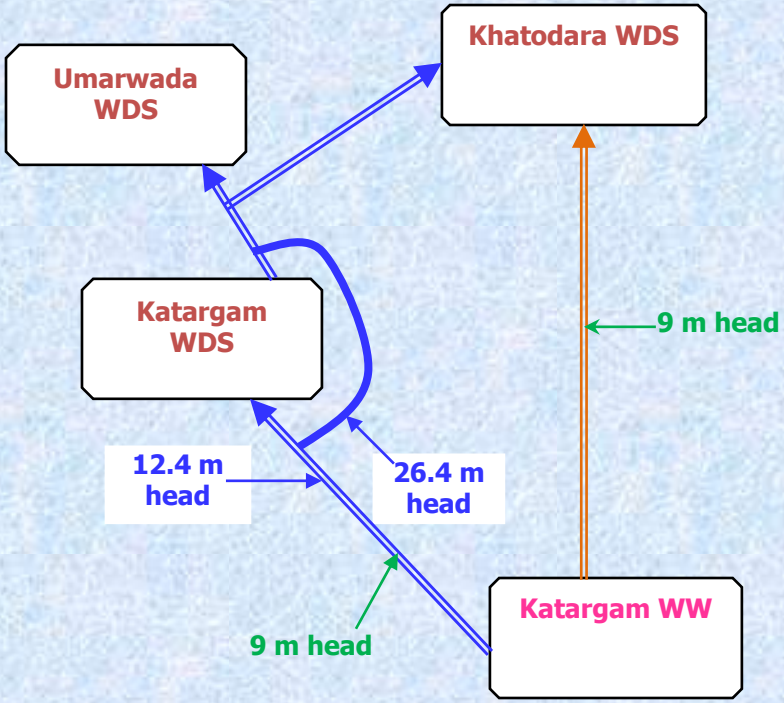
# ACTION

# RE – ENGINEERED ROUTE– (2)



# ACTION

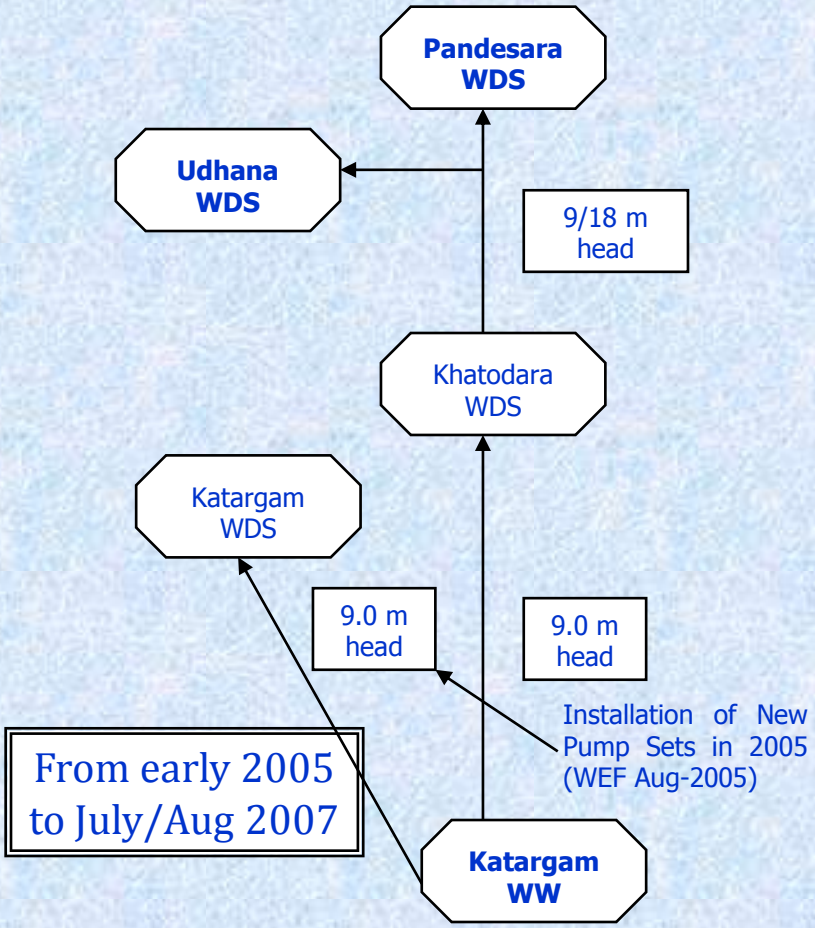
# RE – ENGINEERING – (3)



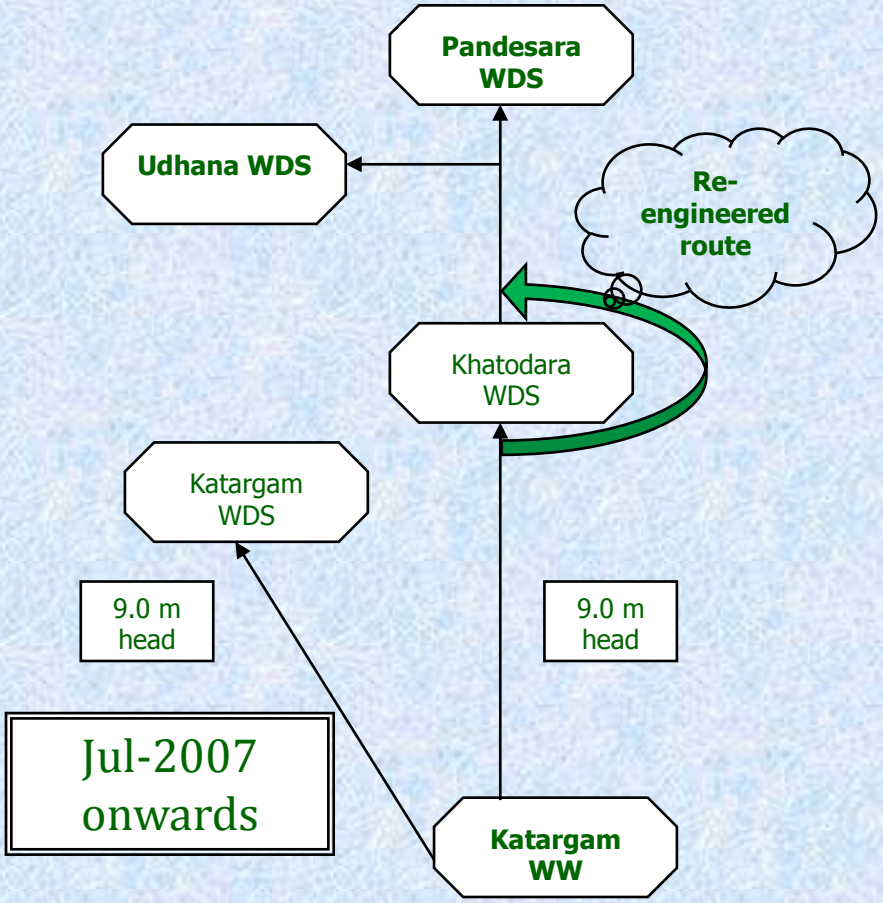

# ACTION

## RE – ENGINEERED ROUTE– (4)

**BEFORE RE-ENGINEERING**




**AFTER RE-ENGINEERING**



# *Energy Saving Summary*
# *[Re-engineering of Water Supply Routes(s)]*

| Sr. No. | WEF | Brief Description of Activity | Energy Saving Envisaged | Actual Recurring Energy Saving | | Investment Made (Rs.) |
|---|---|---|---|---|---|---|
| | | | KWH/ annum | KWH/ annum | Rs./ annum | |
| (1) | Jul-04 | Change in UGT Filling Route for Umarwada WDS | 2,917,080 | 4,048,564 | 16,375,227.00 | 1,367,190.88 |
| (2) | Sep-05 | Change in UGT Filling Route for Khatodara & Athawa WDS from Rander Water Works | 757,740 | 2,134,375 | 8,537,500.00 | 4,637,538.00 |
| (3) | Aug-05 | Installation of 12 Nos. of New Pump Sets at Katargam Water Works | 1,265,625 | 1,439,820 | 5,758,407.00 | 9,600,000.00 |
| (4) | Jul-07 | Change in UGT Filling Route (Partial) for Udhana & Pandesara WDS from Katargam Water Works | 1,134,055 | 551,287 | 2,232,712.00 | 4,532,413.78 |
| **Sub Total 1** | | | **6,074,500** | **8,174,046** | **32,903,846.00** | **20,137,142.66** |

# ACTION

# OTHER SAVING MEASURES

- Apart from re-engineering the routes the areas wherein was the scope of energy saving were identified and were acted upon. The areas and process followed in brief is as under: -
- Increase the Contract demand at Joganinagar WDS (1,500 to 1,900 KVA)
- Installation of thyristor based APFC panels at
  - Umarwada WDS
  - Katargam WDS
- Coating of 1 No. of 335 HP HS pump at New Booster House of Head Water Works
- Installation of 4 nos. of 300 HP capacity new HSCF pump sets at Old Booster House of Khatodara WDS for Water Distribution in surrounding areas
- Installation of 1 no. of 300 HP capacity new HSCF pump sets at New Booster House of Head Water Works for Water Distribution in surrounding areas
- Replacement of impeller for 1 no. of 150 HP capacity HSCF pump at Old Booster House of Head Water Works
- Replacement of impeller for 1 no. of 135 HP capacity VT pump at Raw Water Well of Head Water Works
- Installation of Total 21 efficient & appropriate head Pump Sets at Frechwell-1 & 2 and Old Booster House at SWW and Jackwell of Head Water Works

# *Energy Saving Summary (Other Energy Saving Measures)*

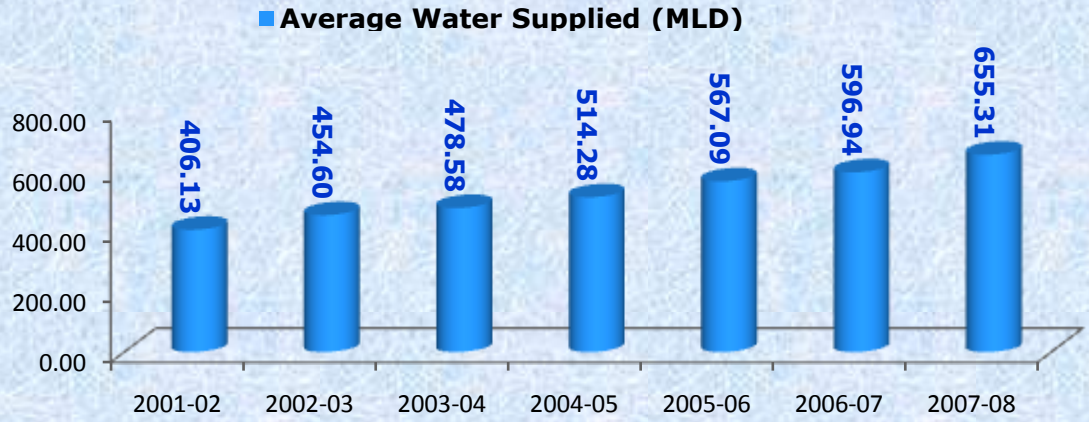
| Sr. No. | WEF | Brief Description of Activity | Actual Recurring Energy Saving | | Investment Made (Rs.) |
|---|---|---|---|---|---|
| | | | KWH/ annum | Rs./ annum | |
| (1) | Jun-04 | Increase in Contract Demand at Joganinagar WDS | ----- | 86,213.00 | 40,000.00 |
| (2) | Apr-04 | Improvement of PF through Installation of Thyristor Based APFC Panel at Umarwada WDS | ----- | 227,174.30 | 225,000.00 |
| (3) | Jul-04 | Improvement of PF through Installation of Thyristor Based APFC Panel at Katargam WDS | ----- | 308,578.30 | 225,000.00 |
| (4) | Jun-04 | Coating of 1 No. of pump at Head Water Works | 19,465 | 85,645.00 | 80,040.00 |
| (5) | Aug-04 | Installation of 4 Nos. of New Pump Sets at Khatodara WDS | 178,200 | 801,900.00 | 1,466,700.00 |
| | | Installation of 1 No. of Energy Efficient Pump Sets at Head Water Works | 20,404 | 89,776.00 | 366,650.00 |
| (6) | Jan-05 | Replacement of Impeller for 1 No. of Pump at HWW- Old Booster House | 62,250 | 273,901.30 | 91,000.00 |
| | | Replacement of Impeller & Bowl Assembly for 1 No. of Pump at HWW- Raw Water | 109,925 | 483,669.90 | 373,480.00 |
| (7) | Mar-07 to Aug-07 | Installation of Total 21 Pump Sets at Frechwell-1 & 2 and Old Booster House at SWW and Jackwell of Head Water Works | 2,300,088 | 9,457,924.00 | 13,765,411.00 |
| **Total** | | | **2,690,332** | **11,814,781.80** | **16,633,281.00** |

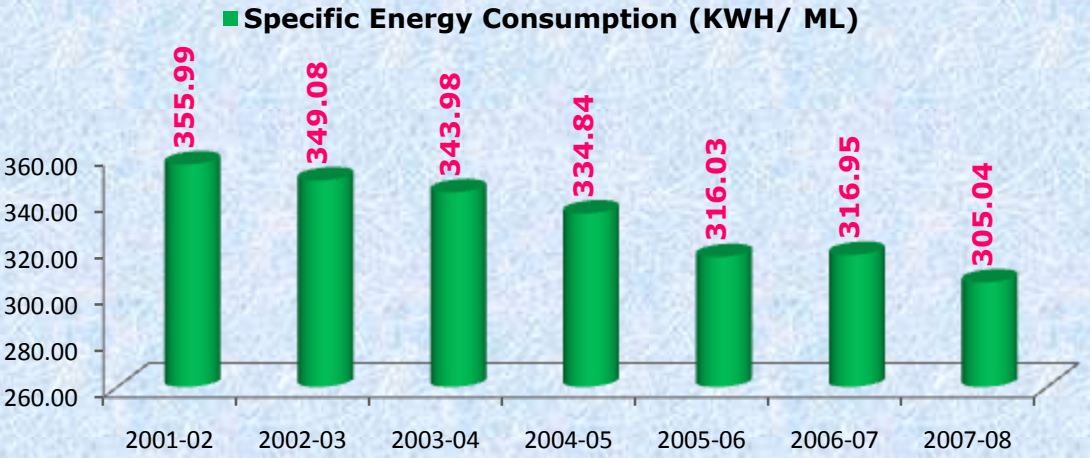
# Total Energy Saving in Water Supply System

| Sr. No. | Activities | Actual Recurring Energy Saving | | Investment Made (Rs.) |
|---|---|---|---|---|
| | | KWH/ annum | Rs./ annum | |
| (1) | Re-engineering in Water Supply Route(s) | 8,174,046 | 32,903,846.00 | 20,137,142.66 |
| (2) | Other Energy Saving Measures | 2,690,332 | 11,814,781.80 | 16,633,281.00 |
| **Total** | | **10,864,378** | **44,718,627.80** | **36,770,423.66** |

# ACHIEVEMENTS

Energy conservation is continuous activity & constantly going on. With the efforts made, results achieved are as below: -



# Sustainability

To sustain the energy efficiency activities successfully,

- ✓ Energy Consumption pattern & Bill data of all HT & LT Services is continuously monitored. 43 HT services are accounting for 81% of electricity bill, which are more closely monitored.
- ✓ Further, database of specific energy consumption e.g. KWH/ ML of potable water distributed is prepared and it is also being monitored.
- ✓ Measurement of efficiency of most important machineries like pumps, motors, transformers, air conditioners are periodically checked through in-house/ external energy auditing. Accordingly, improvement of efficiency of machineries/ equipments is planned/ executed.

# Replication

The energy conservation activities done by SMC have shared with

- Bureau of Energy Efficiency
- Government of Gujarat
- Municipal Corporations of Gujarat
- Gujarat Urban Development Company
- Various Municipalities like Navsari, Bardoli etc.

The energy conservation activities have been appreciated by BEE, GEDA, Government of Gujarat & SMC's top Authorities. Copies are enclosed ahead:

ENERGY IS LIFE ऊर्जा कार्यकुशलता ब्यूरो
( भारत सरकार, विद्युत मंत्रालय )
BUREAU OF ENERGY EFFICIENCY
CONSERVE IT (Government of India, Ministry of Power)

अजय माथुर, पीएच.डी
महानिदेशक
Ajay Mathur, Ph.D.
Director General

27 OCT 2006

20th October 2006

Dear Shri Joshi

I thank you for your letter dated 18/10/2006 highlighting magnificent performance of Surat Municipal Corporation in the area of energy conservation. I congratulate you on the achievement of saving 12.4 million kWh per year.

I would very much like that the initiatives taken by you which have led to these savings may be shared with other municipal corporations of the country so as to provide guidance on energy conservation measures. BEE will work with Surat Municipal Corporation to prepare a "best practice case study" based on the information that you have provided to us. This could perhaps become a background document which could be circulated at the proposed national workshop on "Energy Conservation in the Municipal Corporation". Please also let us know of the specific support you envisage from BEE in the organisation of this workshop.

I also agree with your suggestions that we should add an award for "Energy Conservation in Municipal Corporations" in the National Awards on Energy Conservation. Unfortunately, it is too late to add this category for this year's award, but we will certainly put up this award category for consideration in the next year's award scheme.

With best wishes

Yours sincerely,

(Ajay Mathur)

Shri Pankaj Joshi, IAS
Commissioner
Surat Municipal Corporation
Muglisara, Surat - 395 003

MC/SMC
10/12/2006.

EEC/In/No. 192
Dtd: 01/11/06



हाल नं 4, द्वितीय तल, एनबीसीसी टावर, 15 भीकाजी कामा प्लेस, नई दिल्ली-110 066
Hall No. IV, 2nd Floor, NBCC Tower, 15 Bhikaji Cama Place, New Delhi - 110 066
टेली/Tel : 26178316 ( सीधा/Direct) 26179699 (5 Lines) फैक्स/Fax : 91 (11) 26178328
ई-मेल/E-Mail : dg-bee@nic.in वेबसाईट/Web-Site : www.bee-india.nic.in

**GUJARAT ENERGY DEVELOPMENT AGENCY**
Suraj Plaza II, Sayajiganj,
Vadodara - 390 005, Gujarat
Phones: (0265) 2363123, 2361409, 2362058,
Fax: (0265) 2363120, website:www.geda.org.in

Ref: GEDA/TEC.EC/2006/042 Date: April 3, 2006

To

Executive Engineer (Head Water Works)
Surat Municipal Corporation
Muglisara
Surat – 395 003

Subject: Appreciation for the Energy Conservation Efforts by SMC.
Ref: Your letter no: EEC/Out/No.-249 dated: 16/2/2006.

Dear Sir,

This is with reference to the above subject and your letter mentioned above.

We have gone through the report on the EC activities undertaken by SMC during the year 2005-06. We appreciate the interest and initiative taken by the Surat Municipal Corporation for conserving the vital energy resources and setting an example for others to follow.

If you agree we would like to make up a case study of the excellent work done by you and publish the same in coming issue of GEDA Dairy.

We take this opportunity to congratulate SMC and all the SMC officers who have taken active role in this model work.

Thanking you.

Yours truly,

(S. B. Patil)
Dy. Director

EEC/Tr/No. 5
Dtd: 10/4/06

Balwant Singh, IAS
PRINCIPAL SECRETARY

No.PS/EPD/SMC/2006,
Dated: 13.07.2006.

To
Municipal Commissioner,
Ahmedabad / Vadodara / Rajkot / Bhavnagar/ Jamnagar / Junagadh.

Sub: Energy Conservation Activities done / under progress by Surat Municipal Corporation.

Sir,

I have been informed by Shri Pankaj Joshi, Municipal Commissioner, Surat about various energy conservation activities undertaken by the Surat Municipal Corporation (SMC). SMC has created an Energy Efficiency Cell to plan and undertake various energy conservation measures. After creation of the Cell, approximately 12.4 million units per year is saved amounting to Rs.5.19 crores per annum.

The measures undertaken by SMC are commendable. I enclose a copy of Shri Pankaj Joshi's letter along with some details with his letter.

I would suggest that you may also like to undertake some similar and other energy conservation measures in your area which can also give substantial saving in financial terms to the Corporation.

Yours faithfully,

(BALWANT SINGH)

CC:
Shri S.R.Rao, PS(UDD)

Shri Pankaj Joshi, MC, SMC, Surat

શહેરી વિકાસ વર્ષ – ૨૦૦૫

# સુરત મહાનગરપાલિકા

## પ્રશંસાપત્ર

સુરત મહાનગરપાલિકા હાઈડ્રોલીક ખાતા તથા એનર્જી એફીસીયન્સી સેલની ટીમે હાઈડ્રોલીક ખાતાની સીસ્ટમના અભ્યાસ દરમ્યાન ઉમરવાડા જળવિતરણ મથક, સરથાણા વોટરવર્કસ તથા ડુંભાલ જળવિતરણ મથક ખાતેની પાણી પુરવઠાની લાઈનોના જોડાણો / પ્રક્રિયામાં જરૂરી ફેરફાર કરવાના કારણે હેડવોટરવર્કસ ખાતેના વીજળી વપરાશના બીલમાં ઘરખમ ઘટાડો કરાવવા જેવી મહત્વની કામગીરી કરવા બદલ સુરત મહાનગરપાલિકા ગૌરવની લાગણી અનુભવે છે.

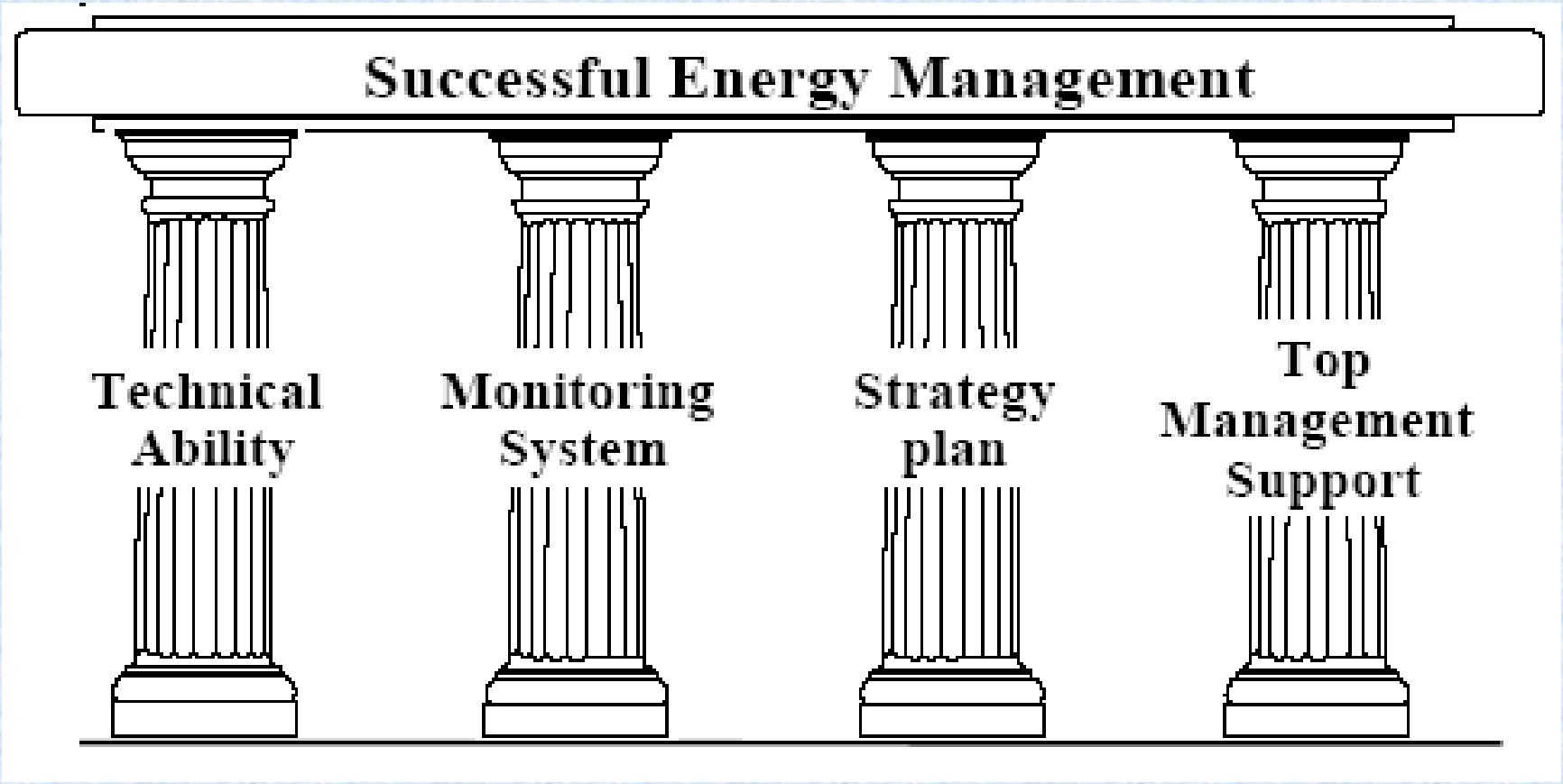
તેમના અતિ મહત્વના યોગદાન બદલ પ્રોત્સાહન રૂપે ટ્રોફી તથા પ્રશંસાપત્ર એનાયત કરવામાં આવે છે.

પંકજ જોષી
કમિશનર
સુરત મહાનગરપાલિકા

સ્નેહલતાબેન ચૌહાણ
મેયર
સુરત મહાનગરપાલિકા

# The Success in Energy Conservation is achieved through ……

# Four Pillars of Successful Energy Management



# *Lets Join hands to make Surat & Earth a better Inhabitable Place*