

RPS



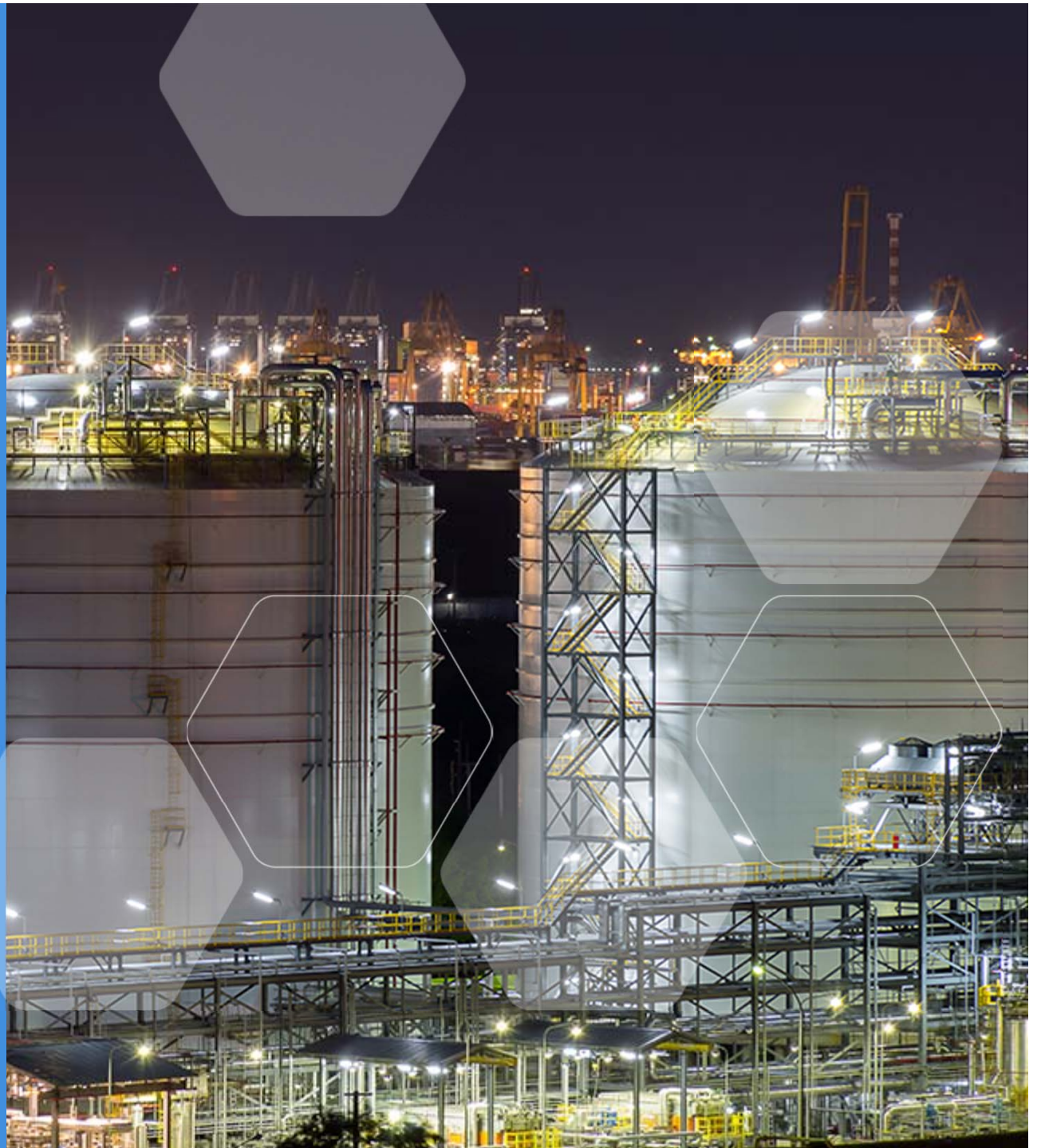
Session C: Water Conservation

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Local Knowledge
INTERNATIONAL EXPERTISE



RC PLAN ASSETS: NOT JUST WATER

RC Plan focuses on natural assets:

- Energy use
- Water use
- Solid waste generation
- TUR chemicals below threshold
- Chemicals exempt from TURA
 - Substances in articles
 - Janitorial products



TUR PLANNER SURVEY

- Are you a TUR Planner who is able to certify an RC Plan?

Per the MassDEP June 2018 TUR Planner list, less than 20% of all TUR Planners can certify RC plans

- If not, have you considered getting certified?

CERTIFYING RC PLANS: MY EXPERIENCE

- Advantages:
 - More options for clients
 - Possibility of more clients
 - Dovetails with other sustainability work
 - Personal interest
 - Helps avoid burnout
- Disadvantages:
 - Requires additional training
 - Requires RC-specific credits
 - Waste RC credits can be hard to find



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PLANNERS: TO RC OR NOT TO RC



You may ask yourself, “Well....How did I get here?”

RC PLAN SURVEY

- Is your facility eligible for an RC Plan?

Complete one TUR Plan and two plan updates

- Has your facility considered an RC Plan?

- Has your facility prepared an RC Plan?

RC PLANS: ADVANTAGES

- A break from a stagnant TUR
- Bigger financial savings
- Environmental, Social, & Governance
- Impact feels more local
- Easier to involve all employees
- Sustainability program



RC PLANS: HURDLES

- Not eligible yet
- Not all TUR Planners can certify RC Plans
- Using the EMS option
- Less work to update the TUR Plan
- Don't have accurate data (e.g. usage)
- Have to return to the TUR Plan

I  My TUR
Planner

RC PLAN SURVEY

What is your hurdle? How can you get over the hurdle?



MSI TRANSDUCERS CORP (MSI)

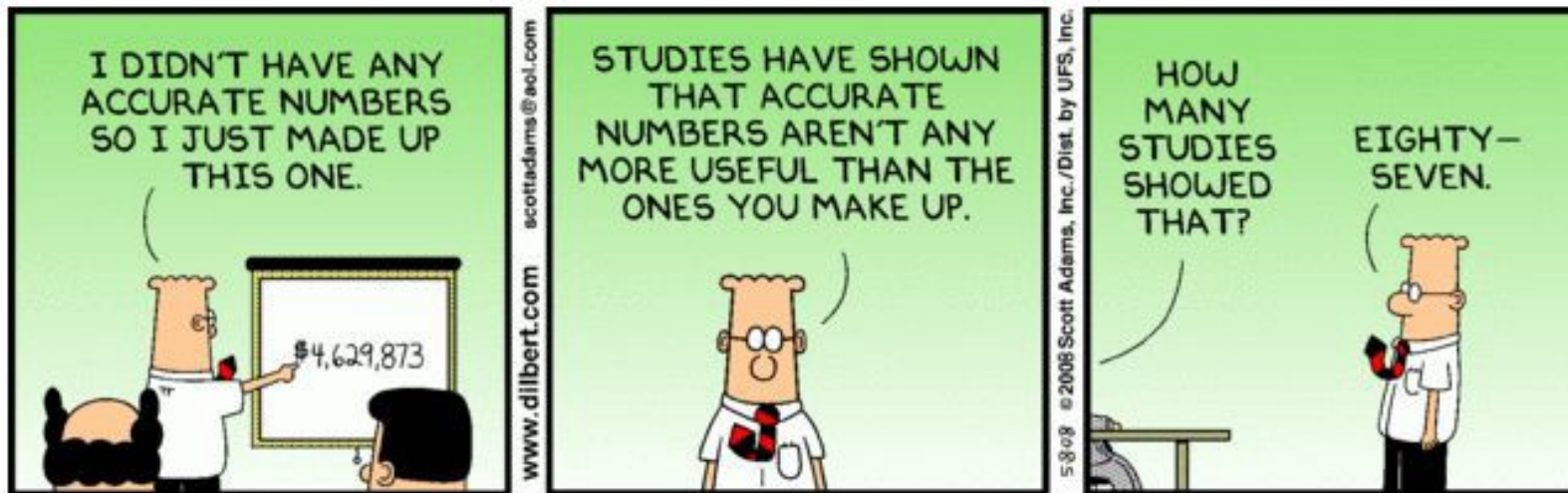
- Manufacturer of high performance transducers, arrays and advanced materials
- Lead compounds are processed and are a key component of our product
- Prepared a RC Plan focusing on electricity use in 2010
- Had positive results from 2010 RC Plan
- Have an active TUR team

MSI: 2016 WATER CONSERVATION PLAN

At the time of the RC Plan development:

- 13 employees (28 currently)
- Much of the manufacturing had moved to the west coast
- Engineering remained in Massachusetts
- ROI: one year
- Employees received \$15 gift cards for their suggestions

IF YOU CAN'T MEASURE IT.....



MONITORING WATER USE

In addition to the water balance, try to determine:

- Why is water used?
- What are the losses?
- Is there unexpected flow during off-hours?
- Is there excessive consumption of water?
- Can pressure or volume be reduced?
- Can water treatment be optimized?
- Can water be reused?
- Can rain water be captured and used?



MSI WATER CONSERVATION PLAN PROCESS

- Identify areas and equipment that use water
- Measure water usage
- Propose solutions
- Evaluate solutions
 - Technical
 - Economic
 - Resource Conservation
- Implement solutions

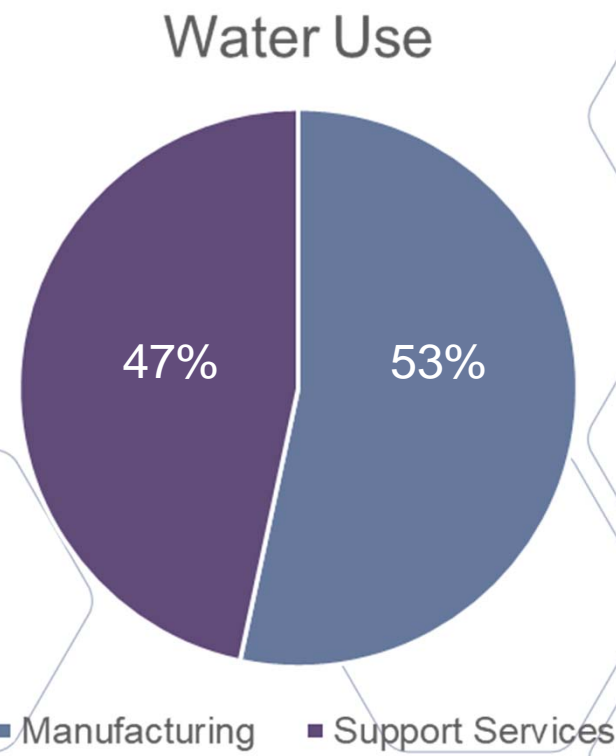
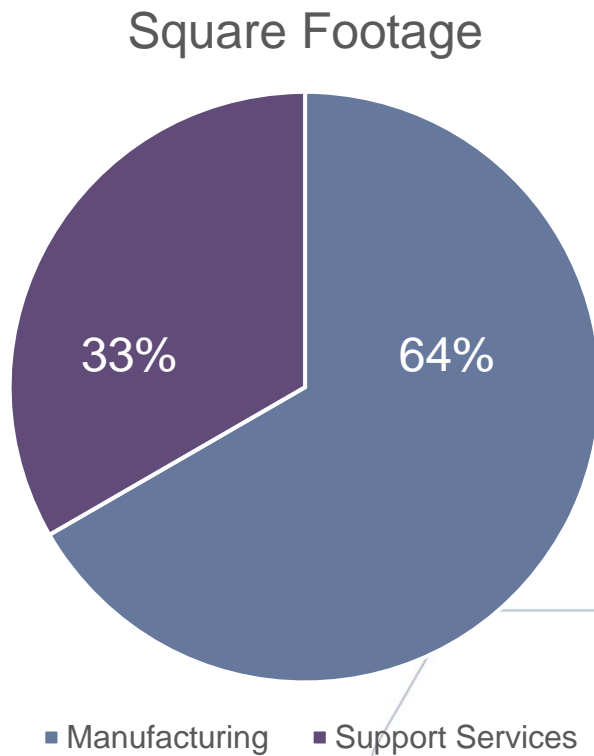
MSI WATER CONSERVATION OPTIONS

Options considered focused on:

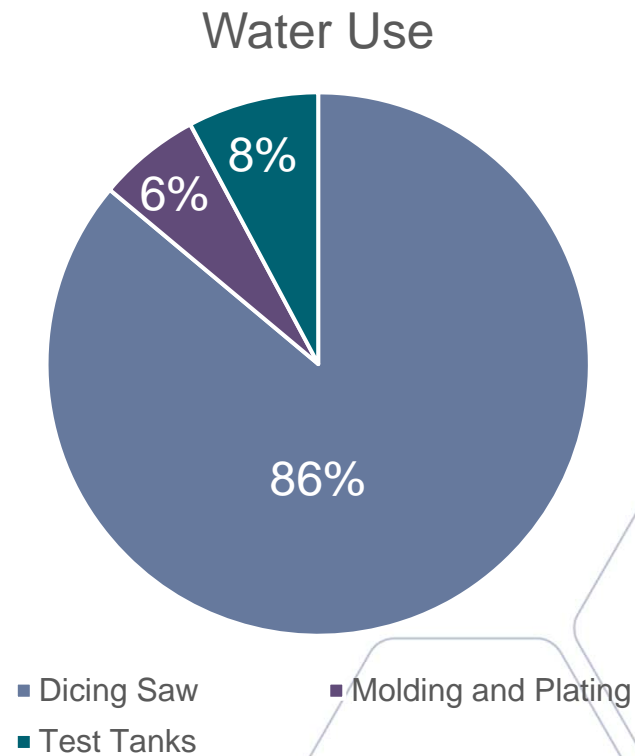
- Engaging employees
- Facility-wide scope
- Redirecting or reusing water
- Simple and advanced options
- Fixing leaks
- Reducing evaporation
- Improving equipment efficiency



MSI WATER USAGE RESULTS

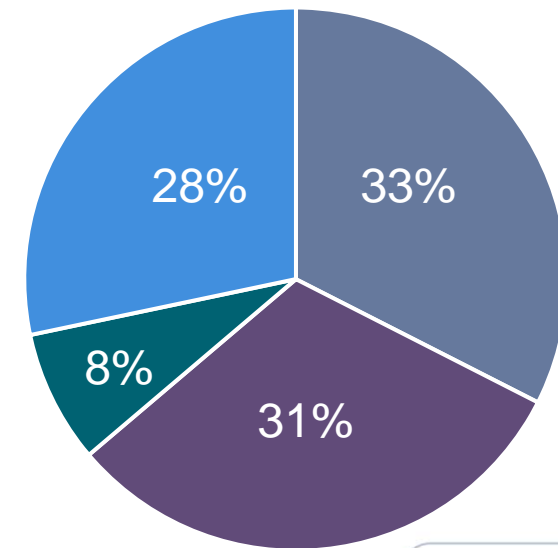


MSI WATER USAGE: MANUFACTURING



MSI TRANSDUCERS: SUPPORT SERVICES

Water Use



- Men's toilets
- Sinks
- Coffee and Urinals
- Women's toilets



EVALUATING OPTIONS

Don't forget to include:

- Cost of wastewater discharge
- Change in chemical use (e.g., water treatment chemicals)
- Cost of energy for:
 - Pumping water
 - Heating water
 - Cooling water



MSI OPTIONS EVALUATED

Area or Item	Options Considered	Options Implemented
Plating Line	10	0
Heating System	2	0
Sink Faucets	3	1
Kitchen	2	0
Toilets	3	1
Dicing Saw	1	Evaluate further
Molding	2	0
Test Tanks	3	1 and 1 to evaluate further
Landscaping	6	0
Facility Wide	5	2

REJECTED MSI RC OPTIONS

Area or Item	NA	RC	Technical	Economic
Plating Line	1	0	4	5
Heating System	2	0	0	0
Sink Faucets	0	0	1	1
Kitchen	0	1	0	1
Toilets	0	0	0	2
Dicing Saw	0	0	0	0
Molding	0	2	0	0
Test Tanks	0	0	0	1
Landscaping	6	0	0	0
Facility Wide	0	0	1	0

REJECTED MSI OPTIONS

- Approximately 21% of the options were not applicable
- Only 8% of the options were not resource conservation
- Approximately 16% of the options were not technically feasible
- Approximately 27% of the options were not economically feasible

ROI = 12 months

OPTIONS IMPLEMENTED BY MSI

- Install aerators on faucets: 0.5 gallons per minute savings
- Install water-saver fill valves on the toilets: 2 gallons per flush
- Cover test tank with a pool cover to reduce evaporation
- Install signage in strategic areas to encourage water conservation
- Install insulation on piping located within 3 feet of the water heater

FOR FURTHER CONSIDERATION BY MSI

- Conduct a third party water audit
- Closed loop system for dicing saw water supply



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QUESTIONS?

**Water is
wealth**
It's time to save!



Local Knowledge

INTERNATIONAL EXPERTISE

RPS has grown into one of the world's pre-eminent consultancies by underpinning our local connections with the resources and knowledge of an international business.

We employ more than 5000 people across Europe, North America and the Australia Asia Pacific regions.

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