



IVECO pre-treatment plant water study

1. Company profile

Iveco Trucks Australia manufactures and distributes light, medium and heavy commercial vehicles for the Australian road transport industry. Its manufacturing plant at Princes Highway, Dandenong represents a major investment in the local trucking industry. Iveco employs 600 people nationally.

Iveco is currently involved in the Victorian Government's water management action plan (waterMAP) program. As part of the program users of > 10 ML of drinking water per year are required to:

- Assess their current water use
- Identify inefficiencies and opportunities for water savings
- Prepare an action plan to implement water conservation activities
- Annually report on implementation of water conservation activities

2. waterMAP Assist

The Australian Industry Group (Ai Group) is committed to working with member companies to encourage continuous improvement, resource efficiency, use of recycled water where possible, and reduced usage of drinking water. Ai Group's waterMAP Assist program has provided resources and funding to member companies to assist them implement initiatives contained in waterMAPs and deliver water savings in industry.

3. Project overview

Drinking water is currently used in Iveco's pre-treatment plant for various rinse stages of the zinc phosphate treatment process which is required in the painting of various truck components. To reduce drinking water consumption, an alternative source of water supply for the pre treatment plant was investigated.

Ai Group's waterMAP Assist program provided funding to enable Iveco to conduct an investigative study to:

- Determine the feasibility of installing water tanks to supply a sufficient quantity and quality of water for use in the pre-treatment plant
- Identify the practical feasibility of the project in terms of cost, design, operation and requisite water quality
- Provide assistance in design of the project including a budget breakdown and any operational and safety factors that must be managed

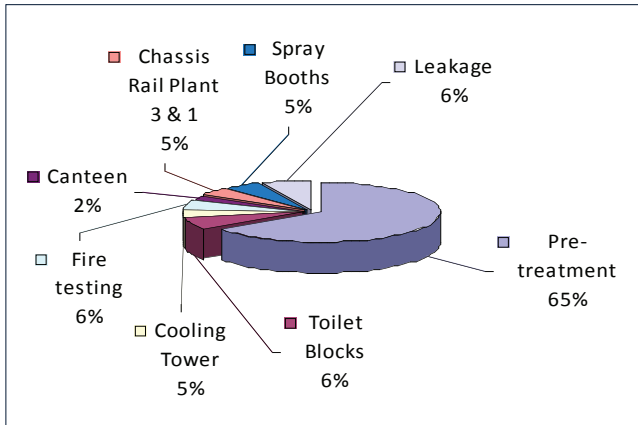
The project encouraged Iveco Trucks to address their water usage and provided information on ways to reduce drinking water consumption on-site.

4. Water use

Figure 1 displays the main areas of water consumption with the pre-treatment plant accounting for 65% of the total annual site water consumption. All other main areas of water consumption are relatively minor in comparison, with none accounting for more than 6% of total annual water consumption.



FIGURE 1 WATER USE BREAKDOWN



5. Key findings

The key findings of the pre-treatment water plant feasibility study included:

- Pre-treatment of rainwater is required to enable it be used in the pre-treatment plant
- A pre-treatment mixing tank which combines rainwater with drinking water would be required to achieve the necessary water quality
- Based on an economic and engineering analysis including annual rainfall, roof space and estimated daily drinking water use of pre-treatment water, it was recommended that two 25 kL rainwater tanks be installed

6. Project costs and payback periods

The project costs of the mixing tank system and consequent payback period for the project is displayed Table 1. The costs are based on two 25 kL rainwater tanks, two 5 kL mixing tanks, and associated piping, pumps, valves and controls.

The costs displayed in Table 1 are largely indicative and it is recommended that a rigorous cost analysis is performed before proceeding with the project. The results detailed in Table 1 suggest an extended capital payback period for the project. The economic viability of the project will be largely determined by availability of funding and current water prices.

7. Project benefits

The study provided Iveco Trucks with:

- A water balance of the site and identified key areas of water consumption
- A solution for collecting rainwater and treating it to the required standard in lieu of drinking water
- A platform for further investigation into water efficiency projects
- Background information on the operation of rainwater tanks and an analysis of rainfall data in the vicinity of the site

If implemented, this project could save up to 1.5ML of drinking water per annum.

TABLE 1 PROJECTED COSTS AND WATER SAVINGS

Roof Area required (m ²)	Annual usage from tank (kL)	Water savings (%)	Capital cost (\$)	Cost savings (\$/yr)	Capital payback period (yrs)
8,000	1,508	19	91,000	1,538	45.5

Further information

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Ai Group's waterMAP Assist program, supported by the Department of Sustainability and Environment (DSE) has enabled Ai Group to work with large industrial water users to identify and implement water savings.