Case Study

Client:	*KDHC*	**Industry:**	*Power Generation*
Scope:	*Hot & Cold Water Pumps*	**Date:**	*August 2016*
Location:	*South Korea*	**Products:**	*RF 900 & RP 500*

Overview

After many years of utilising other ceramic systems, KDHC were searching for a new system which could improve the efficiency of their hot and cold water pumps.

Challenge

KDHC were looking for a minimum 5% reduction in energy consumption. The chosen system would then be specified to coat all of their pumps.
The hot water pump coating also had to be able to withstand temperatures up to 100°C.

Solution

Both the hot and cold water pumps were grit blasted to Sa 2½, before localised areas affected by pitting damage were filled using specialised metal repair putties.
The hot water pumps received two coats of **Hot-cote™ RF 900**.
The cold water pumps received two coats of **Ceram-chem™ RP 500**.

Outcome

Please find the outcome of the testing in the tables below:

	Hot Water Pump		
	Before	**After**	**Change**
Power (kW)	324.94	298.21	**- 8.2%**
Flow (m^3/hr)	1,108.13	1,296.89	**+ 17.0%**
Efficiency (%)	45.5	61.8	**+ 16.3%**

	Cold Water Pump		
	Before	**After**	**Change**
Power (kW)	443.49	419.54	**- 5.4%**
Flow (m^3/hr)	3,173.06	3,520.0	**+ 10.9%**
Efficiency (%)	56.4	72.1	**+ 15.7%**

By utilising the Chemco technology, the overall energy consumption had decreased whilst the efficiency had increased by +16.3% and +15.7% respectively.

All hot and cold water pumps under the control of KDHC will now be coated using Chemco's solvent-free ceramic coating technology.

Benefits

- **Solvent-free**
- Significantly increased pump efficiencies
- Energy consumption substantially reduced
- High temperature resistance (up to 210°C)
- Hardwearing ceramic coatings with excellent abrasion and impact resistance

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Photographs:

- No. 1 Completed Application: Hot Water Pump
- No. 2 Completed Application: Cold Water Pump

* Photographs courtesy of Taejung Industry

Continued overleaf

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Photographs:

- Nos. 3-4 Hot and Cold Pumps Original Condition
- Nos. 5-6 Hot and Cold Pumps After Surface Preparation
- Nos. 7-8 Hot and Cold Pumps After First Coat

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