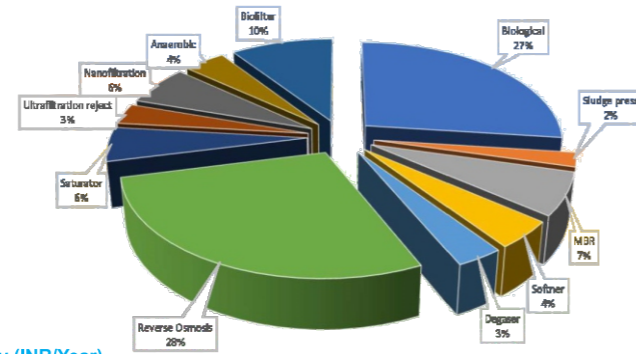


Operation & Maintenance

Specific Cost Analysis of the Plant Phases (INR/M³)

	Total	Power	Chemicals	Spares	Manpower	Sludge
Biological	21.49	8.49	4.50	1.27	2.21	5.02
Sludge Press	1.77	0.37	0.47	0.37	0.55	0.00
MBR	5.29	2.70	0.10	1.65	0.83	0.00
Softner	3.40	0.49	1.74	0.62	0.55	0.00
Degaser	2.57	0.67	1.05	0.68	0.18	0.00
Reverse Osmosis	22.46	12.82	4.85	2.58	2.21	0.00
Saturator	4.26	0.30	3.13	0.28	0.55	0.00
Ultrafiltration Reject	2.56	1.32	0.12	0.58	0.55	0.00
Nanofiltration (RO IV)	5.01	3.63	0.42	0.21	0.00	0.74
Anaerobi	3.20	1.40	0.22	0.75	0.83	0.00
Biofilter	7.85	5.78	0.13	0.39	0.55	1.00
Plant	68.81	30.80	16.39	8.24	7.63	5.75
PVA Treatment	11.05	7.18	0.35	1.14	1.38	1.00



Cost Analysis of the Plant Phases Ordinary Plus Extraordinary (INR/Year)

	1	2	3	4	5	6	7	8	9	10
Biofilter	6673231	6760213	6847195	6934178	7414280	7108142	7195124	7282107	7777329	7456071
Biological	17702554	17947079	18191605	18436130	20414596	18925181	19169707	19414232	21459388	19903283
Belt Press	1393515	1427700	1691385	1496070	1764256	1564441	1837126	1632811	1909996	1701181
MBR	4079161	4200952	4322744	4444536	4566327	4688119	4809910	20593292	5053494	5175285
Softner	2704169	2764960	2825752	2886544	2947335	6221127	3068919	3129711	3190502	3251294
Degaser	2008336	2062169	2116003	2169836	2223669	2277503	2331336	2385170	2439003	2492836
Reverse Osmosis	18366376	18651290	18936204	30345118	19506031	19790945	31523859	20360773	20645687	32702600
Saturator	3508559	3557145	3605730	3654316	3702901	3751487	3800073	3848658	3897244	3945829
Ultrafiltration Reject	2060525	2101380	2142236	2183091	2925946	2264801	2305657	2346512	3116367	2428222
Nanofiltration (RO IV)	-	-	-	-	-	-	-	-	-	-
Anaerobic	2585563	2651919	2718274	2784630	2850986	2917341	2983697	3050053	3116408	3182764
	65276115	66360876	67675138	80488699	72678220	73912921	84329782	88531033	77135074	87693866

Management and Maintenance of the System (O&M) for the achievement of the fixed objectives.

Professional Services Include...

- Innovative and Ergonomic System design
- All Equipment and Spares Supply with regard to waste water Treatment
- Budget pricing
- Complete Project management
- Round the clock Technical backup
- Operation and maintenance of systems
- Environmental and customer friendly Plant installation
- Detailed Plant Study and analysis & Technical Consultancy Services

Our Supplies Include...

- Effluent Treatment Plants
- Sewage Treatment Plants
- Water Treatment Plants
- Ultra Filtration & MBR
- Quartz Filters And Softner Filters
- Reverse Osmosis Plants
- Decarbonating Towers And Cooling Towers
- Rotating Brush Screeners
- Cartridge Filters
- Resins
- Laboratory Equipments



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We can treat and reuse every drop of waste water

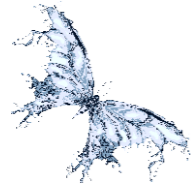
Design, Construction and Installation of Civil and Industrial Waste Water Plants

"If it Happens to Treat Waste Water, Consult the expert first and then the reason"
Leonardo Da Vinci (1452 - 1519)



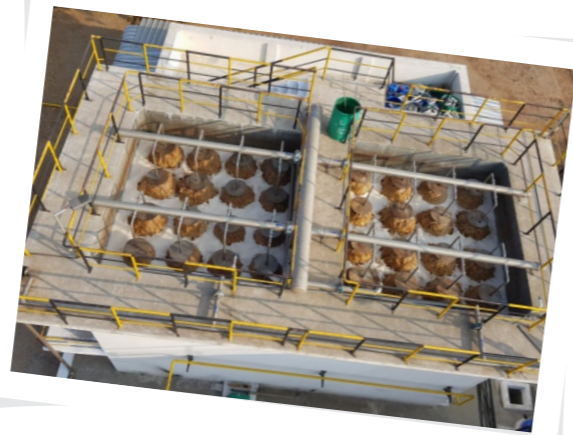
Biological System with Basin C hannel

Our specialists are continuously looking for lowest operating cost solutions. The installation of flow makers into oxidation tanks renders it possible to achieve great energy savings, in comparison to the energy consumption of the respective traditional solutions.



Micro-bubble Diffusers for Aeration

The high efficiency in oxygen transfer allows very low plant operating costs: a specific efficiency of at least 3.0 Kg O₂/kW is achieved.



High Load Biofilter

This technology is able to greatly reduce the occupied spaces for biological plant. It is also used for the treatment of PVA after anaerobic.

PVA Treatment System

IWT&RS has set up a system capable to treat the PVA used in the industrial process. This system can be used in the Zero Liquid Discharge wastewater treatment, and it can also prevent problems to the RO membranes, making them to last up to 4 years.



Ultrafiltration

Treatment with ultrafiltration membranes can separate the colloids present to 0.3 microns in diameter, including bacteria and viruses. In some cases, it is possible to recover the ultrafiltered water for washing, rinsing, cooling, etc. The reduction of "bio-fouling" allows energy saving and extending the useful life of membranes up to 4 years, reducing significantly the cost of spare modules.



Waste Water Recycling & Recovery Technology

Design, Construction and Installation of Civil and Industrial Waste Water Plants



MBR – Membrane Bioreactor

The treatment with membranes allows to separate colloids present up to 0.3 microns in diameter and to recover part of the filtered water. At the same time the reduction of the "bio-fouling" allows to lengthen the useful life of the membranes. The SDI value obtained with MBR is less than 2.5. The system allows you to eliminate the classic decanter, the quartz filter and the UF greatly reducing the areas occupied, the costs of machinery and energy costs accordingly.



Softener and Degaser

The system of automatic water softening for cooling towers, boiler water, drinking water, well water treatment for industrial use. The inorganic "scaling" membranes of R.O. in the process of "0" discharge is used to eliminate the hardness and reduce inorganic scaling. Considering the high salinity in this process special resins are used to work properly in these conditions.



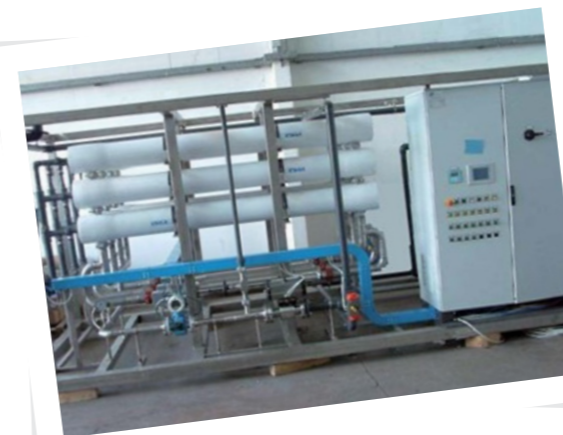
Reverse Osmosis - RO

In this section, it is possible to make recovery of permeate to 94-96%. The lack of hardness and organic matter on permeate makes water recovered ideal for dyeing and washing operations in the production process. Besides, it is also possible to use them for feeding low and medium pressure boilers.



Nanofiltration

By using selective membranes, it is possible to separate the salt (NaCl) content in the rejection of the R.O. The separated salt has a high degree of purity and is fully used in dyeing processes. This solution minimizes the cost of salt purchase and reduces dramatically the costs of the concentrate evaporation, allowing recovering 3% more water.



Crystallization MEE

If it is required to achieve the maximum limit of dewatering of the final concentrated residue, it is possible to install a system of forced mechanical crystallization to reduce the final sludge volume to be disposed in landfill.

