

# Instant Market Insights

We live in a silo world where the insights we need for a decision are inaccessible.

In McIlvaine's *Instant Market Answers* program discussions are conducted by Bob McIlvaine as online video conferences. Revenue forecasts for many flow and treat applications in different countries and industries can be displayed. McIlvaine has 15 reports with an average of 50,000 forecasts per report which are current and can be instantly accessed online.

Market share data on thousands of companies is on display as well as lots of project data. The client may not need to know the details but if they can see a display of gas turbine installations in Algeria, coal fired power plants in India or the cleanrooms in California it will provide an instant insight. Much time has been spent in the last six months analyzing the coronavirus impacts on the flow and treat industry. There are major negative impacts for most flow and treat companies but for suppliers of air filters and masks it is an unprecedented opportunity. McIlvaine has services with daily alerts on both the technology and pharmaceutical solutions. This provides perspective on the longer-term impact by country and product.

Bob McIlvaine is available for conferences as short as 30 minutes or for extended engagements. There is much to contribute relative to sales or product decisions. Another great value can be advice for senior management relative to organic growth or acquisitions.



# Urgent Answers For Flow And Treat Suppliers

Markets				Technology
Prospects	Industry	Competitors	Region	Product, Process Industry
By Importance	Emerging such as lithium and manufactured frac sands	Market shares by product and region	Continent, sub region, country	Emerging such as Trump Trillion Tree
By Location	Changing such as coal fired boilers or biopharmaceuticals	SWOT Analyses	State, province, ore area such as Permian Basin	Important such as ZLD, LNG, Marine SO2

The analysis in  
*Coronavirus*  
*Technology Solutions*  
allows McIlvaine to  
evaluate COVID long  
range impact on  
The flow and treat  
industry

## **Coronavirus Alerts**

**March 30, 2020 to Present**

**[August 14, 2020](#)**

**Are Inefficient Masks the Hub Merely Redirecting Viruses to the Spokes  
Little Available Research on Droplet Evaporation from Inefficient Mask  
Small HEPA Air Purifier that can be Hung Around the Neck  
Smart Air Reviews a Personal Air Purifier and Sheds Light on COVID Protection  
Smart Air has Analyzed Air Pollution Levels in China for the First Six Months of  
2020**

**Are Japanese Pitta Masks Effective Against Air Pollution?**

**[August 13, 2020](#)**

**TSI Testing, Masks Ventilators and Isolation Room Air Pressure  
Elmarco says High Efficiency Media Cost is Nominal  
How Effective are the Aerosol Filtration Efficiencies for Fitted Face Mask  
Alternatives?**

**Oregon Schools Assessing HVAC Systems**

**Springfield Oregon Purchases 500 Air Purifiers**

**Large Hog Processor Shuts Down Due to COVID**

**Doctors Group Sues to Make Meat Processors Test Product for COVID  
China Requiring Meat Processors to Certify that Products are Virus Free**

**Wisconsin Tribal Casino Installing UVGI**

**[August 12, 2020](#)**

# Coronavirus Pharmaceutical Solutions Alerts

## Headlines

### August 4, 2020

- **Center for American Progress advice on fill-finish capacity**
- **Federal government should immediately complete a comprehensive assessment of both the CIADMs and the FFMN**
- **Center for American Progress advice on expanding manufacturing capacity for vaccine supplies**
- **Common colds can train the immune system to recognize COVID-19**
- **Moderna reveals how much its coronavirus vaccine would cost per dose**
- **Listing of Potential drugs COVID-19 treatments that show promise**
- **Federal Government Selects Grand River Aseptic Manufacturing to Help Combat COVID-19**

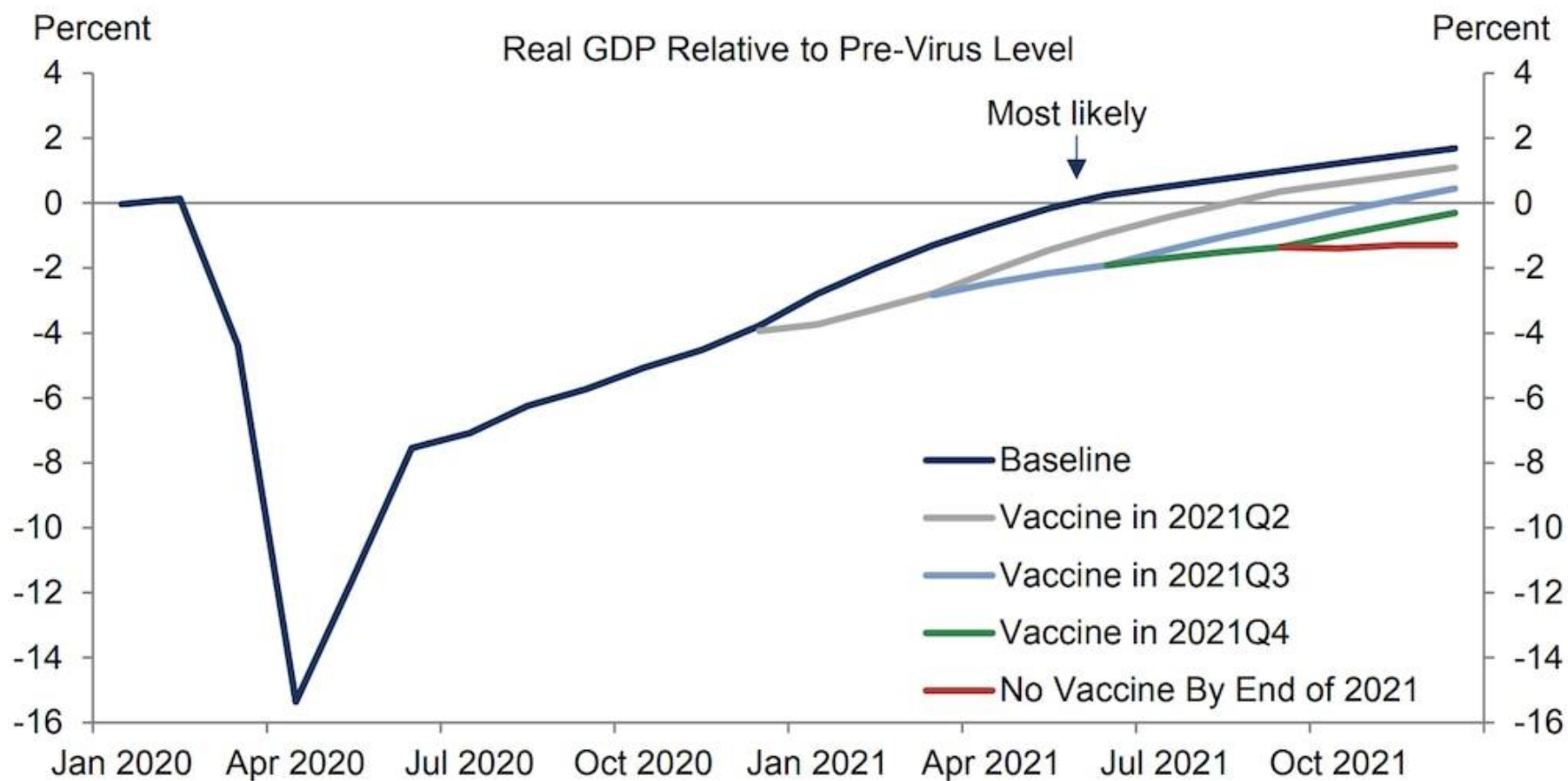
### July 30, 2020

- **Moderna's rumored \$50-plus price on COVID-19 vaccine causes criticism as company touts new animal data**
- **How the world made so much progress on a Covid-19 vaccine so fast**
- **Vaccines train the immune system to recognize a pathogen it hasn't yet encountered**
- **With numerous COVID-19 vaccines in development, various pricing strategies have emerged**
- **Pfizer's COVID-19 vaccine strategy includes two phases, and a mandate to develop more mRNA platform vaccines**
- **Which covid-19 treatments work and how close are we to getting more?**
- **RA Therapy Studied for COVID-19 Does Not Meet Endpoint**
- **Finding coronavirus super-spreaders may be key to halting a second wave**
- **Which covid-19 treatments work and how close are we to getting more?**
- **Yale and AI Therapeutics launch potential COVID-19 treatment**

The Analysis in  
*Coronavirus  
Pharmaceutical  
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**Exhibit 1: We Now Expect Vaccine Approval in Late 2020 and a Boost to Growth in the First Half of 2021**

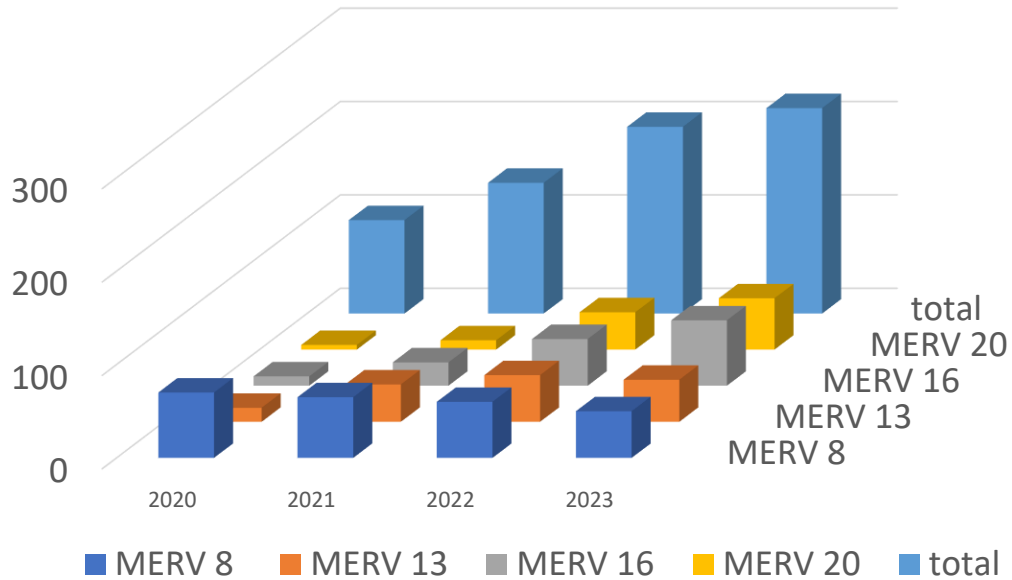


Source: Goldman Sachs Global Investment Research

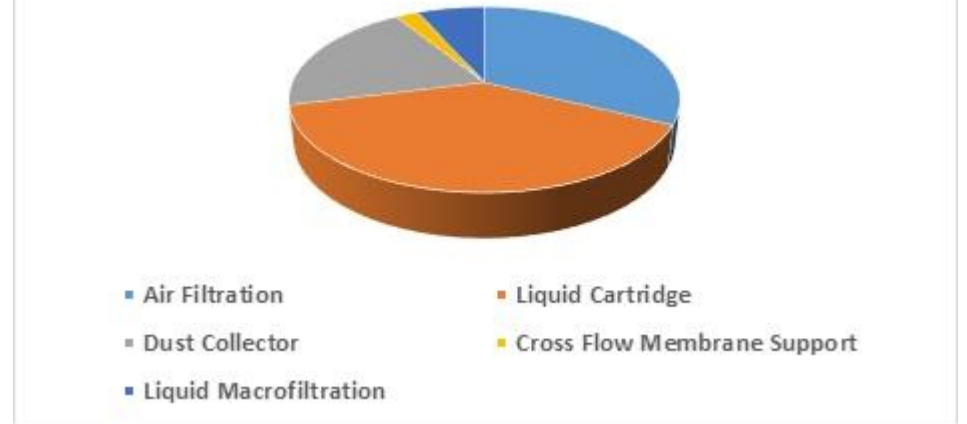


# Huge Market Growth for Purifiers and Filters to Mitigate COVID

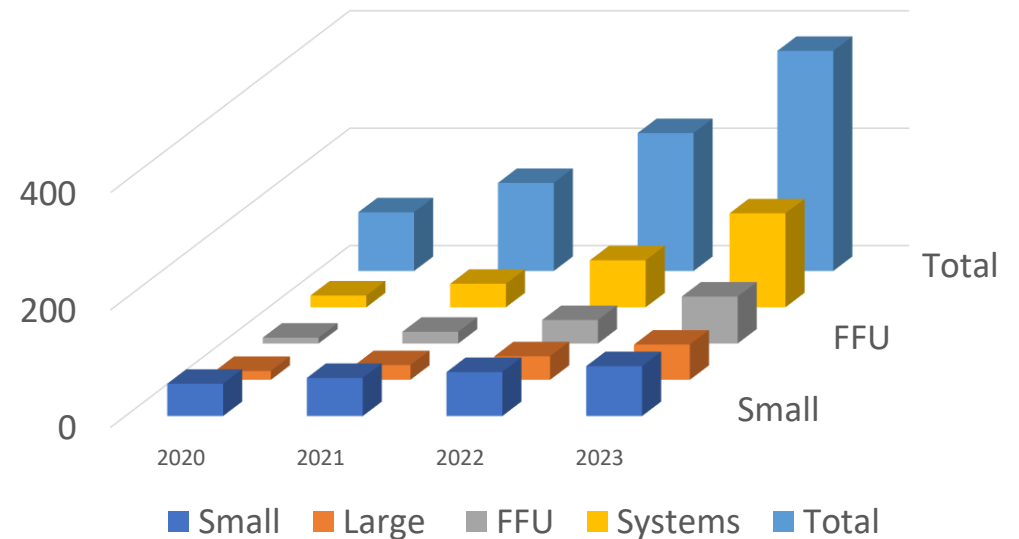
Air Filter Revenues -% 2020



Nonwoven Media Filtration Revenues



Stand Alone, FFU, Laminar Flow System Revenues % 2020



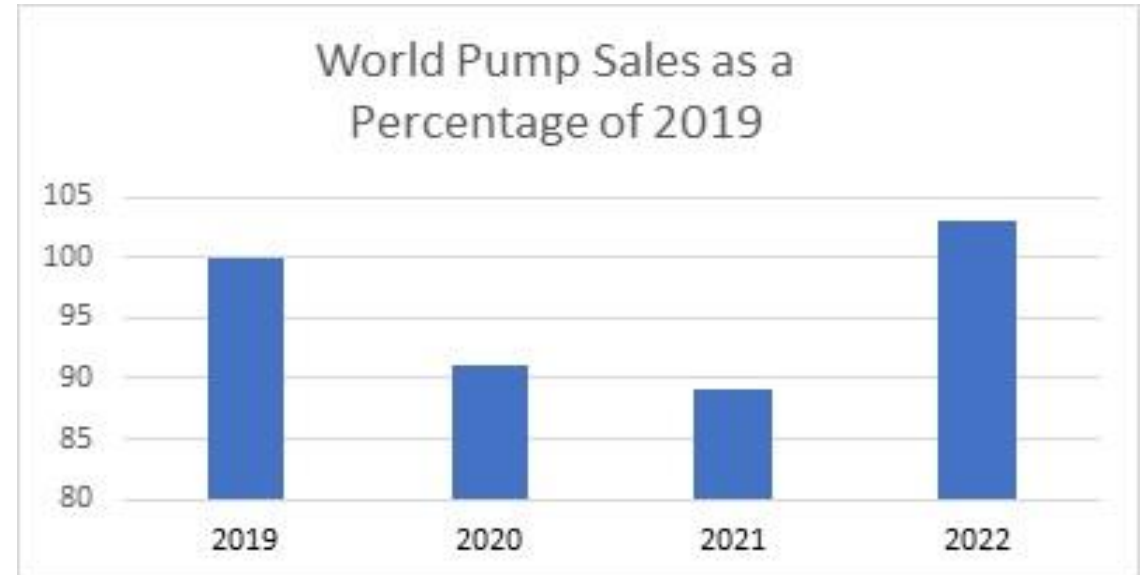
Percent of the 2019 Market Held by Each Industry				
Industry	2019	2020	2021	2022
Total	100	90	89	103
Chemical	10	9	9	10
Food	3	3	5	6
Metals	5	4	4	5
Mining	1	1	1	1
Oil & Gas Extraction	10	6	5	8
Oil and Gas Transmission	8	7	6	6
Other Industries	6	5	5	6
Petrochemicals	8	7	6	8
Pharmaceutical	5	6	7	8
Power	10	9	8	8
Pulp & Paper	7	6	6	7
Refining	12	11	10	12
Wastewater	9	10	10	11
Water	6	6	7	7



## Mid Case Scenario 2022 Market

Market Report	% 2019
Fabric Filters	110
Scrubbers	114
FGD	98
Precipitators	96
Thermal	105
Liquid Filtration	118
Sedimentation	116
Pumps	110
Valves	112
Treatment Chemicals	130
Air Filters	200
Monitoring	120
Cleanrooms	135

## Low Case Scenario



## Purchase of Pumps by the Largest Power Plant Operators

Company	Country	Rank	% for New Plants vs Replacement or Environmental
<b>AEP</b>	U.S.	9	0
<b>BHE</b>	U.S.	14	0
<b>Datang</b>	China	3	5
<b>Duke</b>	U.S.	10	0
<b>Enel</b>	Italy	13	0
<b>Eskom</b>	South Africa	5	10
<b>Guodian</b>	China	2	5
<b>Huaneng</b>	China	1	5
<b>Huadian</b>	China	6	5
<b>J-Power</b>	Japan	16	4
<b>National Thermal Power Corporation (NTPC)</b>	India	4	20
<b>NRG</b>	U.S.	11	0
<b>Shenhua</b>	China	7	5
<b>Southern</b>	U.S.	12	0
<b>Uniper</b>	Germany	15	0
<b>Vietnam Power (EVN)</b>	Vietnam	8	20

## Valve Purchases by Large Companies Home Based in France and Germany - 2019

Company	Home	Industry	\$ millions
Air Liquide	France	Chemical	84
EDF	France	Power	583
Engie	France	Oil & Gas	143
LaFarge Holcim	France	Stone	72
Sanofi	France	Pharma	50
Schlumberger	France	Oil & Gas	57
Total Refineries	France	Refinery	235
Total SA	France	Oil & Gas	339
BASF	Germany	Chemical	311
Covestro	Germany	Chemical	65
Evonik	Germany	Chemical	73
Heidelberg	Germany	Stone	36
Linde	Germany	Chemical	82
Merck	Germany	Pharma	50
Uniper	Germany	Power	5

**Semiconductor Purchases - \$ millions - 2019 - World**

<b>Company</b>	<b>Total</b>	<b>Intel</b>	<b>Samsung</b>	<b>TSMC</b>	<b>SK Hynix</b>	<b>Micron</b>
Cleanroom Hardware	5500	935	715	605	330	275
Cleanroom Consumables	2800	476	364	308	168	140
Ultrapure Water Systems	900	153	117	99	54	45
Scrubbers, Oxidizers	240	41	31	26	14	12
Pumps	240	41	31	26	14	12
Valves	400	68	52	44	24	20
Cartridges	475	81	62	52	29	24
Other Filters, Separators	380	65	49	42	23	19
Cross Flow Membranes	250	43	33	28	15	13
Fans, Compressors	290	49	38	32	17	15
Treatment Chemicals	420	71	55	46	25	21
Guide	700	119	91	77	42	35
Control	600	102	78	66	36	30



Flow and treat suppliers set a high priority on determining the market share for their products as well as their ranking among competitors. There is promotional as well as strategic value. The research needed to generate promotional value is modest. The research needed to maximize the strategic value is considerable.

Scope: To create promotional value it is relatively easy to pick a market scope which favors the company. To create strategic value it is desirable to carefully assess the following definitions

Product which is being evaluated

Application

Industry

Process

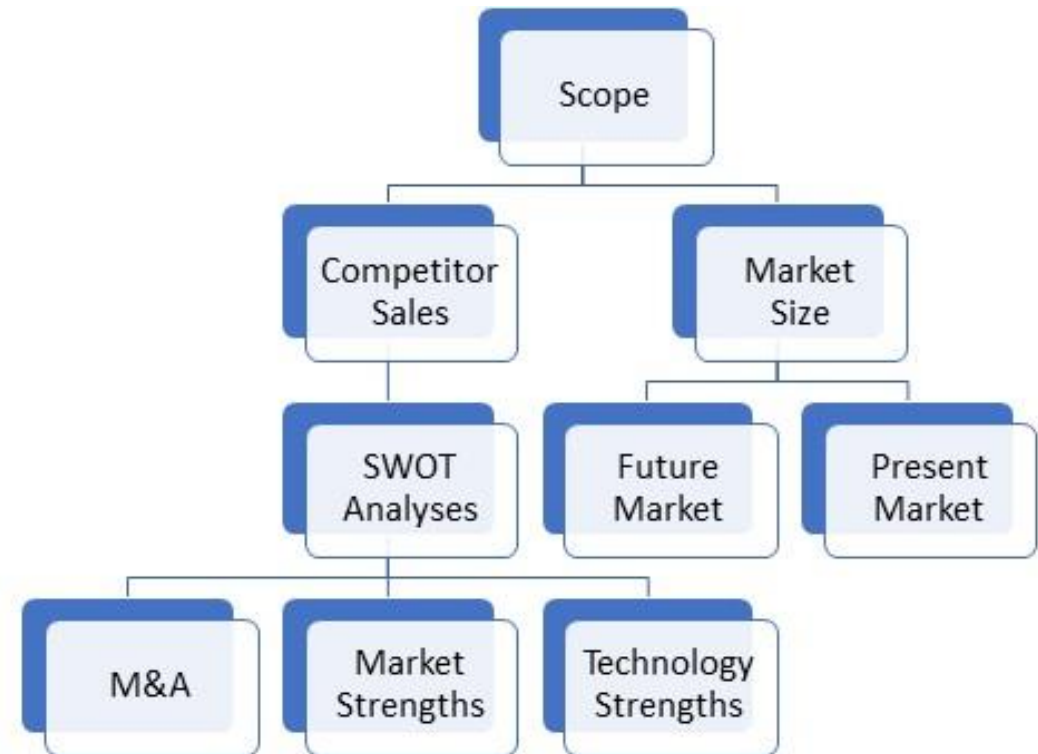
Medium (gases, liquids, free flowing solids)

Geographic scope

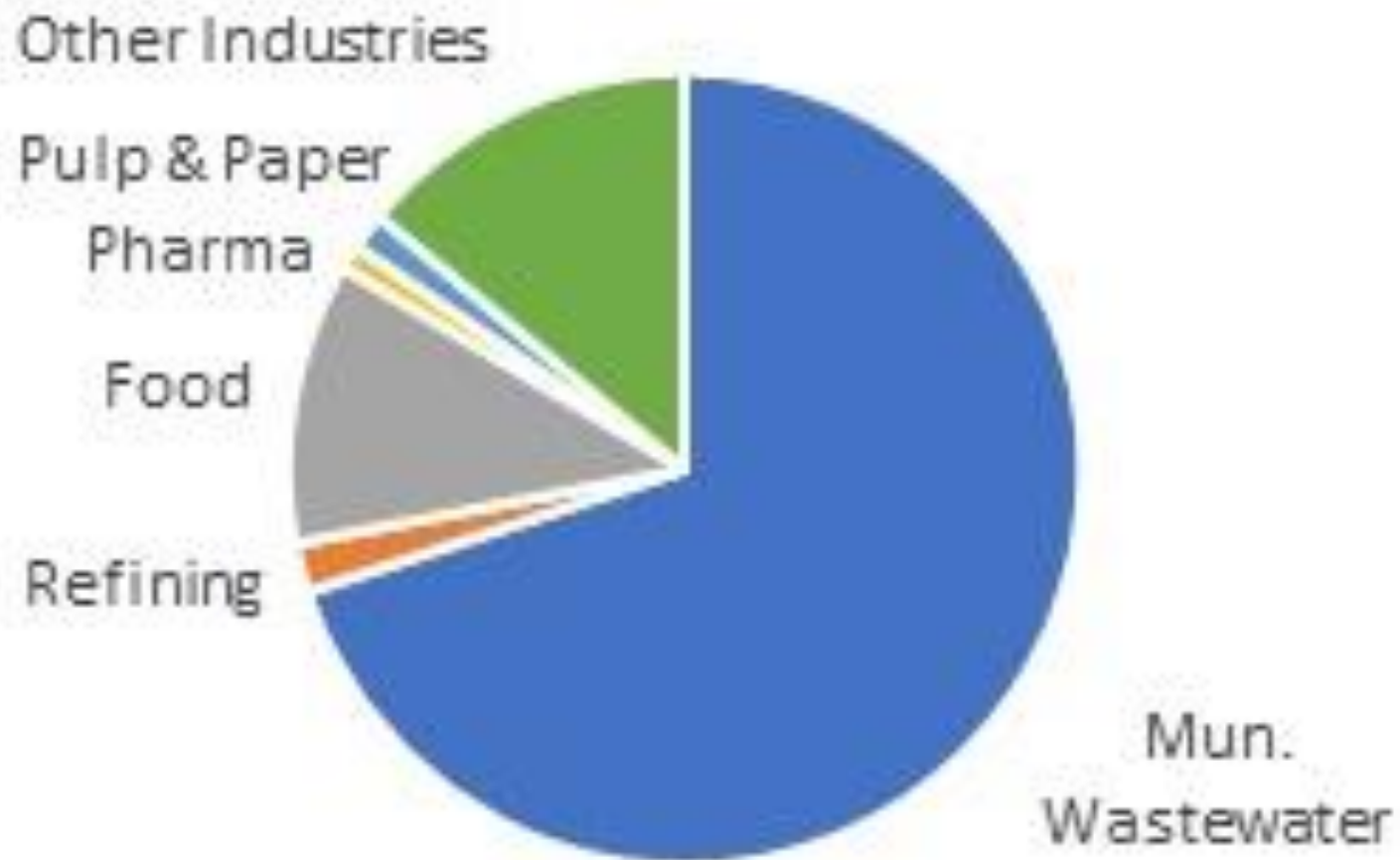
Time frame

Customers (the largest purchasers with centralized flow and treat purchasing are larger customers than half the countries of the world.)

## Meaningful Market Share Assessment



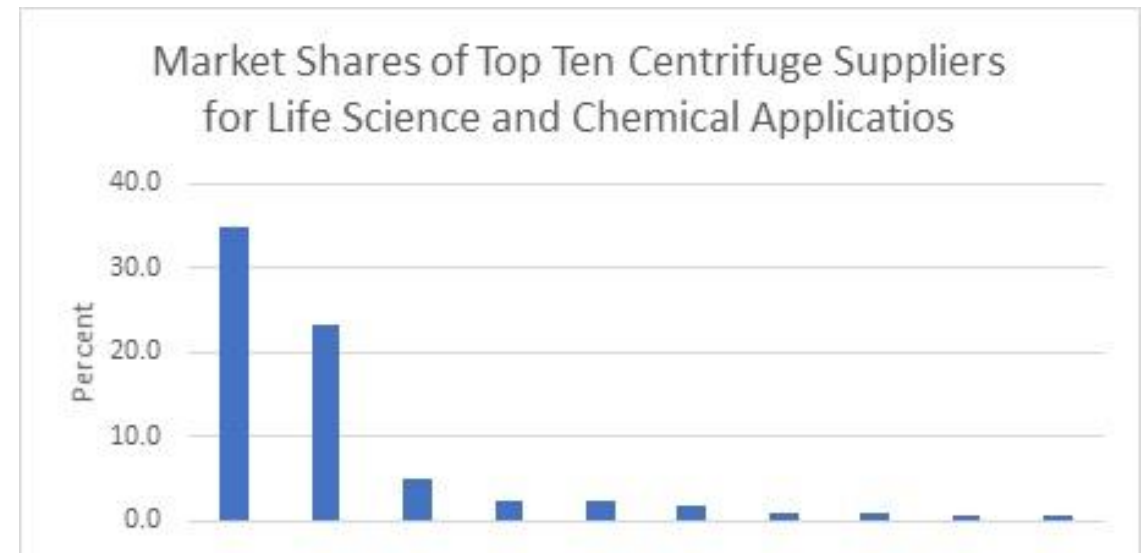
# MBR 2024 Purchases by Industry



## World Petrochemical Combust, Flow, Treat IloT and Remote O&M Revenues \$ billions - 2025

Product	U.S.	ROW	Total	MPM	Total MPM
	\$ billions			%	\$ billions
IloT and Remote O&M - Total	1.9	7.1	9.0	51	4.6
Guide	0.5	1.9	2.4	70	1.7
Control	0.9	3.5	4.4	40	1.8
Measure - Liquids	0.2	0.8	1.0	50	0.5
Measure - Gases	0.2	0.6	0.8	50	0.4
Measure - Solids	0.1	0.3	0.4	50	0.2

Sugar Company World Market Share	Location	Production 1000 tons 2018	Market share %
COSAN LIMITED	Brazil	4,000 (plus ethanol)	2.1
Sudzucker	Germany	4,800	2.5
Tereos	France, Brazil	2900	1.5
Nordzucker	Denmark, Germany	2500	1.3
Wilmar	Australia	2000	1.0
British Sugar	UK	1500	0.7
Mitr Phol	China	1300	0.6
American Sugar	Chalmette LA Refinery	1,000	0.5





## Catalyst and Reagent Purchases \$ millions - 2019

Company	Reagent	Catalyst
Datang	423	139
Guodian/Shenhua	726	238
Huaneng	544	179
Huadian	363	119
NTPC	189	62
ENEL	60	37
J-Power	30	10
KEPCO	142	46
AECOM	57	19
AEP	66	22
BWE	36	12
Duke	60	20
NRG	60	20
Southern	60	20
Vietnam Power	121	40

## TSMC Flow and Treat Purchases 2019

Flow		Cleanroom		Chemicals		Environment	
Type	\$ Mill	Type	\$ Mill	Type	\$ Mill	Type	\$ Mill
Pumps- Cen	11	Wipes	55	Act Carbon	5	Absorbers	7
Pumps-Rot	5	Gloves	90	Chelants	0.3	Adsorbers	8
Pumps Rec	3	Furniture	9	Cor. Inhib	6	Therm-Ox	1
Pumps - Dia	5	Ionizers	2	Defoamers	0.6	Dust Coll-	7
Valves- Ball	11	Disinfect	50	Inorg-Coag	11	Filter Press	0.1
V-Butterfly	8	Floors	5	Ion Exch	4	Leaf Filter	0.1
V-Check	2	HVAC	40	Odor	0.5	Sand Filter	0.6
<b>Guide</b>	<b>50</b>	Devices	45	Gas Phase	20	<b>Cart-Mem</b>	<b>60</b>
Sub -Total	276		508		184.4		140.7

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