

## **MARKETS AND PROFITABILITY**

# **Market Analytics: para-Xylene and PTA - 2023**

December 2023



This Report was prepared by NexantECA, the Energy and Chemicals Advisory company ("NexantECA"). Except where specifically stated in this Report, the information contained herein is prepared on the basis of information that is publicly available and, contains no confidential third party technical information to the best knowledge and belief of NexantECA. The information has not been independently verified or otherwise examined to determine its accuracy, completeness or financial feasibility. Neither NexantECA, Subscriber nor any person acting on behalf of either shall have any liabilities for any loss or damage arising from or connected to the use of any information contained in this Report. NexantECA does not represent or warrant that any assumed conditions will come to pass.

The Report is for Subscriber's internal use only and shall be kept strictly confidential. The Report should not be otherwise reproduced, distributed or used without first obtaining prior written consent by NexantECA. Each Subscriber agrees to use reasonable effort to protect the confidential nature of the Report.

Copyright © by NexantECA (BVI) Ltd. 2024. All rights reserved.



## Contents

<b>1</b>	<b>Executive Summary .....</b>	<b>1</b>
1.1	Polyester Industry.....	1
1.2	PET Melt Phase .....	2
1.3	PET Bottle Grade .....	4
1.4	Mono Ethylene Glycol .....	6
1.5	Ethylene Oxide .....	8
1.6	para-Xylene .....	9
1.7	Purified Terephthalic Acid (PTA).....	11
1.8	Recycling .....	13
1.9	Methodology .....	15
<b>2</b>	<b>The Polyester Industry.....</b>	<b>17</b>
2.1	Introduction.....	17
2.1.1	Market Performance and Developments in Recycling .....	17
2.1.2	Purified Terephthalic Acid .....	21
2.1.3	Dimethyl Terephthalate .....	21
2.1.4	Ethylene Oxide .....	22
2.1.5	Mono Ethylene Glycol .....	22
2.1.6	Polyester Melt Phase .....	22
2.1.7	Polyester Bottle Grade .....	23
2.2	Report Scope .....	25
<b>3</b>	<b>para-Xylene .....</b>	<b>26</b>
3.1	Global .....	26
3.1.1	Key Developments .....	26
3.1.2	Demand.....	26
3.1.2.1	PTA .....	27
3.1.2.2	DMT .....	29
3.1.3	Supply .....	31
3.1.4	Supply, Demand and Trade .....	33
3.2	North America .....	36
3.2.1	Key Developments .....	36
3.2.2	Demand.....	36
3.2.3	Supply .....	38
3.2.4	Supply, Demand and Trade .....	39
3.3	South America.....	42
3.3.1	Key Developments .....	42
3.3.2	Demand.....	42
3.3.3	Supply .....	42
3.3.4	Supply, Demand and Trade .....	43
3.4	Western Europe .....	44
3.4.1	Key Developments .....	44
3.4.2	Demand.....	44



3.4.3	Supply .....	45
3.4.4	Supply, Demand and Trade .....	46
3.5	Central Europe .....	48
3.5.1	Key Developments .....	48
3.5.2	Demand.....	48
3.5.3	Supply .....	48
3.5.4	Supply, Trade and Demand .....	49
3.6	Eastern Europe .....	50
3.6.1	Key Developments .....	50
3.6.1.1	Russia .....	50
3.6.1.2	Other Eastern Europe .....	50
3.6.2	Demand.....	50
3.6.2.1	Russia .....	50
3.6.2.2	Other Eastern Europe .....	51
3.6.3	Supply .....	52
3.6.3.1	Russia .....	52
3.6.3.2	Other Eastern Europe .....	52
3.6.4	Supply, Demand and Trade .....	52
3.6.4.1	Russia .....	52
3.6.4.2	Other Eastern Europe .....	54
3.7	Middle East.....	56
3.7.1	Key Developments .....	56
3.7.2	Demand.....	56
3.7.3	Supply .....	58
3.7.4	Supply, Demand and Trade .....	59
3.8	Africa .....	61
3.8.1	Key Developments .....	61
3.8.2	Demand.....	61
3.8.3	Supply .....	61
3.8.4	Supply, Demand and Trade .....	62
3.9	Asia Pacific.....	63
3.9.1	Key Developments .....	63
3.9.2	Demand.....	64
3.9.2.1	China .....	65
3.9.2.2	North-East Asia .....	67
3.9.2.3	South-East Asia .....	68
3.9.2.4	South Asia.....	69
3.9.2.5	Pakistan .....	69
3.9.2.6	Australasia .....	70
3.9.3	Supply .....	71
3.9.3.1	China .....	71
3.9.3.2	North-East Asia .....	74
3.9.3.3	South-East Asia .....	75
3.9.3.4	South Asia.....	77



3.9.3.5	Australasia .....	78
3.9.4	Supply, Demand and Trade .....	78
3.9.4.1	China .....	79
3.9.4.2	North-East Asia .....	80
3.9.4.3	South-East Asia .....	81
3.9.4.4	South Asia .....	82
<b>4</b>	<b>Purified Terephthalic Acid.....</b>	<b>85</b>
4.1	Global .....	85
4.1.1	Key Developments .....	85
4.1.2	Demand .....	85
4.1.3	Supply .....	89
4.1.4	Supply, Demand and Trade .....	91
4.2	North America .....	93
4.2.1	Key Developments .....	93
4.2.2	Demand .....	93
4.2.3	Supply .....	95
4.2.4	Supply, Demand and Trade .....	95
4.3	South America.....	98
4.3.1	Key Developments .....	98
4.3.2	Demand .....	98
4.3.3	Supply .....	99
4.3.4	Supply, Demand and Trade .....	99
4.4	Western Europe .....	100
4.4.1	Key Developments .....	100
4.4.2	Demand .....	100
4.4.3	Supply .....	101
4.4.4	Supply, Demand and Trade .....	102
4.5	Central Europe .....	104
4.5.1	Key Developments .....	104
4.5.2	Demand .....	104
4.5.3	Supply .....	104
4.5.4	Supply, Demand and Trade .....	105
4.6	Eastern Europe .....	106
4.6.1	Key Developments .....	106
4.6.2	Demand .....	106
4.6.2.1	Russia .....	106
4.6.2.2	Other Eastern Europe .....	107
4.6.3	Supply .....	107
4.6.3.1	Russia .....	107
4.6.3.2	Other Eastern Europe .....	107
4.6.4	Supply, Demand and Trade .....	107
4.6.4.1	Russia .....	107
4.6.4.2	Other Eastern Europe .....	109
4.7	Middle East.....	111



4.7.1	Key Developments .....	111
4.7.2	Demand.....	111
4.7.3	Supply .....	113
4.7.4	Supply, Demand and Trade .....	114
4.8	Africa .....	115
4.8.1	Key Developments .....	115
4.8.2	Demand.....	115
4.8.3	Supply .....	116
4.8.4	Supply, Demand and Trade .....	116
4.9	Asia Pacific.....	118
4.9.1	Key Developments .....	118
4.9.2	Demand.....	118
4.9.2.1	China .....	119
4.9.2.2	North-East Asia.....	121
4.9.2.3	South-East Asia .....	121
4.9.2.4	South Asia.....	122
4.9.2.5	Australasia .....	123
4.9.3	Supply .....	124
4.9.3.1	China.....	124
4.9.3.2	North-East Asia.....	127
4.9.3.3	South-East Asia .....	128
4.9.3.4	South Asia.....	128
4.9.3.5	Australasia .....	129
4.9.4	Supply, Demand and Trade .....	129
4.9.4.1	China .....	130
<b>A</b>	<b>Methodology .....</b>	<b>132</b>
A.1	Market Dynamics Forecasting Methodology .....	132
A.1.1	Capacity Availability and Forecasting .....	132
A.1.1.1	End-Use Consumption Forecasting .....	132
A.1.1.1.1	End-Use Sector Growth .....	133
A.1.1.1.2	Penetration (New Application Growth).....	133
A.1.1.1.3	Short-term Influences.....	134
A.1.2	Monomer Consumption Forecasting .....	134
A.1.3	Production and Trade Forecasting.....	135
<b>B</b>	<b>Technology .....</b>	<b>136</b>
B.1	Purified Terephthalic Acid (PTA).....	136
B.2	Dimethyl Terephthalate (DMT).....	137
B.3	Ethylene Oxide (EO)/Mono Ethylene Oxide (MEG) .....	138
B.4	PET Bottle Grade/PET Melt Phase .....	139
<b>Figures</b>		
Figure 1	Polyester Chain Molecules .....	24



Figure 2	The Polyester Chain .....	24
Figure 3	Global <i>para</i> -Xylene Demand, 2023-e .....	29
Figure 4	Global GDP Growth vs. <i>para</i> -Xylene Consumption Growth.....	30
Figure 5	Global <i>para</i> -Xylene Consumption by Region .....	30
Figure 6	Global <i>para</i> -Xylene Capacity Share by Marketer in 2023-e.....	32
Figure 7	Global <i>para</i> -Xylene Capacity Additions .....	32
Figure 8	Global <i>para</i> -Xylene Capacity.....	32
Figure 9	Global <i>para</i> -Xylene Supply and Demand .....	34
Figure 10	Global <i>para</i> -Xylene Net Exports(Imports) .....	35
Figure 11	North America <i>para</i> -Xylene Consumption, 2023-e .....	37
Figure 12	North America <i>para</i> -Xylene Supply, Demand and Trade.....	40
Figure 13	North America <i>para</i> -Xylene Supply, Demand and Trade.....	40
Figure 14	United States <i>para</i> -Xylene Supply, Demand and Trade .....	41
Figure 15	South America <i>para</i> -Xylene Supply, Demand and Trade .....	43
Figure 16	Western Europe <i>para</i> -Xylene Consumption, 2023-e .....	45
Figure 17	Western Europe <i>para</i> -Xylene Supply, Demand and Trade .....	47
Figure 18	Central Europe <i>para</i> -Xylene Supply, Demand and Trade.....	49
Figure 19	Russia <i>para</i> -Xylene Consumption, 2023-e.....	51
Figure 20	Russia <i>para</i> -Xylene Supply, Demand and Trade .....	53
Figure 21	Other Eastern Europe <i>para</i> -Xylene Supply, Demand and Trade.....	54
Figure 22	Total Eastern Europe <i>para</i> -Xylene Supply, Demand and Trade.....	55
Figure 23	Middle East <i>para</i> -Xylene Consumption, 2023-e.....	57
Figure 24	Middle East <i>para</i> -Xylene Supply, Demand and Trade .....	60
Figure 25	Africa <i>para</i> -Xylene Supply, Demand and Trade .....	62
Figure 26	Asia Pacific <i>para</i> -Xylene Consumption, 2023-e .....	70
Figure 27	Asia Pacific <i>para</i> -Xylene Supply, Demand and Trade .....	83
Figure 28	China <i>para</i> -Xylene Supply, Demand and Trade .....	84
Figure 29	Global PTA Demand, 2023-e .....	87
Figure 30	Global GDP Growth vs. PTA Consumption Growth .....	88
Figure 31	Global PTA Consumption by Region.....	88
Figure 32	Global PTA Capacity Share by Marketer in 2023-e .....	90
Figure 33	Global PTA Capacity Additions/(Closures).....	90
Figure 34	Global PTA Capacity .....	90
Figure 35	Global PTA Supply and Demand .....	92
Figure 36	Global PTA Net Exports(Imports) .....	92
Figure 37	North America PTA Consumption, 2023-e .....	94
Figure 38	North America PTA Supply, Demand and Trade .....	96
Figure 39	United States PTA Supply, Demand and Trade .....	97
Figure 40	South America PTA Supply, Demand and Trade .....	99
Figure 41	Western Europe PTA Consumption, 2023-e .....	101
Figure 42	Western Europe PTA Supply, Demand and Trade .....	103
Figure 43	Central Europe PTA Consumption, 2023-e .....	104
Figure 44	Central Europe PTA Supply, Demand and Trade .....	105
Figure 45	Russia PTA Consumption, 2023-e .....	106



---

Figure 46	Russia PTA Supply, Demand and Trade .....	108
Figure 47	Other Eastern Europe PTA Supply, Demand and Trade .....	109
Figure 48	Total Eastern Europe PTA Supply, Demand and Trade .....	110
Figure 49	Middle East PTA Consumption, 2023-e .....	112
Figure 50	Middle East PTA Supply, Demand and Trade.....	114
Figure 51	Africa PTA Consumption, 2023-e .....	115
Figure 52	Africa PTA Supply, Demand and Trade .....	117
Figure 53	Asia Pacific PTA Consumption, 2023-e .....	123
Figure 54	Asia Pacific PTA Supply, Demand and Trade.....	130
Figure 55	China PTA Supply, Demand and Trade .....	131
Figure 56	China PTA Supply, Demand and Trade .....	131
Figure 57	End-Use Consumption Drivers .....	133
Figure 58	Monomer Consumption Drivers .....	134
Figure 59	Trade Considerations .....	135
Figure 60	PTA Flow Diagram .....	136
Figure 61	DMT Flow Diagram.....	137
Figure 62	EO/MEG Flow Diagram .....	138
Figure 63	Polyester Melt Phase Flow Diagram .....	139
Figure 64	Polyester Melt Phase Flow Diagram .....	140
Figure 65	Polyester Bottle Grade Flow Diagram .....	141

## Tables

Table 1	Global <i>para</i> -Xylene Consumption by End-Use.....	29
Table 2	Global <i>para</i> -Xylene Consumption by Region .....	30
Table 3	Global <i>para</i> -Xylene Supply and Demand .....	34
Table 4	North America <i>para</i> -Xylene Consumption by End-Use.....	37
Table 5	North America <i>para</i> -Xylene Consumption by Country .....	37
Table 6	United States <i>para</i> -Xylene Supply, Demand and Trade .....	41
Table 7	South America <i>para</i> -Xylene Consumption by End-Use .....	42
Table 8	South American <i>para</i> -Xylene Consumption by Country.....	42
Table 9	South America <i>para</i> -Xylene Supply, Demand and Trade .....	43
Table 10	Western Europe <i>para</i> -Xylene Consumption by End-Use.....	45
Table 11	Western Europe <i>para</i> -Xylene Supply, Demand and Trade .....	47
Table 12	Central Europe <i>para</i> -Xylene Consumption by End-Use.....	48
Table 13	Central Europe <i>para</i> -Xylene Supply, Demand and Trade.....	49
Table 14	Russia <i>para</i> -Xylene Consumption by End-Use .....	51
Table 15	Other Eastern Europe <i>para</i> -Xylene Consumption by End-Use.....	51
Table 16	Russia <i>para</i> -Xylene Supply, Demand and Trade .....	53
Table 17	Other Eastern Europe <i>para</i> -Xylene Supply, Demand and Trade.....	54
Table 18	Total Eastern Europe <i>para</i> -Xylene Supply, Demand and Trade.....	55
Table 19	Middle East <i>para</i> -Xylene Consumption by End-Use .....	57
Table 20	Middle East <i>para</i> -Xylene Consumption by Country .....	57
Table 21	Middle East <i>para</i> -Xylene Supply, Demand and Trade .....	60
Table 22	Africa <i>para</i> -Xylene Supply, Demand and Trade.....	62



---

Table 23	Asia Pacific <i>para</i> -Xylene Consumption by End-Use .....	70
Table 24	Asia Pacific <i>para</i> -Xylene Consumption by Country.....	70
Table 25	Asia Pacific <i>para</i> -Xylene Supply, Demand and Trade .....	83
Table 26	China <i>para</i> -Xylene Supply, Demand and Trade .....	84
Table 27	Global PTA Consumption by Derivative .....	87
Table 28	Global PTA Consumption by Region.....	88
Table 29	Global PTA Supply and Demand .....	92
Table 30	North America PTA Consumption by Derivative .....	94
Table 31	North America PTA Consumption by Country.....	94
Table 32	North America PTA Supply, Demand and Trade .....	96
Table 33	United States PTA Supply, Demand and Trade.....	97
Table 34	South America PTA Consumption by Derivative.....	98
Table 35	South America PTA Consumption by Country .....	98
Table 36	South America PTA Supply, Demand and Trade.....	99
Table 37	Western Europe PTA Consumption by Derivative .....	101
Table 38	Western Europe PTA Supply, Demand and Trade .....	103
Table 39	Central Europe PTA Consumption by Derivative .....	104
Table 40	Central Europe PTA Supply, Demand and Trade .....	105
Table 41	Russian PTA Consumption .....	106
Table 42	Other Eastern Europe PTA Consumption .....	107
Table 43	Russia PTA Supply, Demand and Trade .....	108
Table 44	Other Eastern Europe PTA Supply, Demand and Trade .....	109
Table 45	Total Eastern Europe PTA Supply, Demand and Trade .....	110
Table 46	Middle East PTA Consumption by Derivative.....	112
Table 47	Middle East PTA Consumption by Country .....	112
Table 48	Middle East PTA Supply, Demand and Trade.....	114
Table 49	African PTA Consumption by Derivative .....	115
Table 50	African PTA Consumption by Country.....	116
Table 51	Africa PTA Supply, Demand and Trade .....	117
Table 52	Asia Pacific PTA Consumption by Derivative .....	123
Table 53	Asia Pacific PTA Consumption by Country .....	123
Table 54	Asia Pacific PTA Supply, Demand and Trade.....	130



NexantECA partners with clients to help them navigate the big global energy, chemicals and materials issues of tomorrow. We provide independent advice through our consulting, subscriptions and reports, and training businesses using expertise developed in markets, economics and technology through our fifty years of operation. We are entirely dedicated to supporting sustainable development of the industry and provide expert advice with efficiency, speed, and agility.

#### USA

Tel: +1 914 609 0300  
169 Mamaroneck Avenue  
2nd Floor, Suite 100  
White Plains, NY 10601  
USA

#### USA

Tel: +1 832 462 7176  
609 Main Street, Floor 25  
c/o WeWork  
Houston  
Texas 77002  
USA

#### UK

Tel: +44 20 7950 1600  
110 Cannon Street  
London  
EC4N 6EU  
United Kingdom

#### Thailand

Tel: +662 793 4600  
22<sup>nd</sup> Floor, Rasa Tower I  
555 Phahonyothin Road  
Kwaeng Chatuchak  
Khet Chatuchak  
Bangkok 10900  
Thailand

#### Bahrain

Tel: +973 1330 3038  
Level 49, Suite 4902  
West Tower  
Bahrain Financial  
Harbour  
PO Box 60686  
Bahrain

#### Malaysia

Tel: +60 322 98 7212  
Level 28,  
The Gardens South Tower  
Mid Valley City  
Lingkaran Syed Putra  
Kuala Lumpur 59200  
Malaysia

#### China

Tel: +86 21 6050 1119  
Room 02-15, 2F Block 1  
58 Yao Yuan Road  
Pudong, Shanghai, 200126  
China

#### Disclaimer

This Report was prepared by NexantECA, the Energy and Chemicals Advisory company. Except where specifically stated otherwise in this Report, the information contained here is prepared on the basis of information that is publicly available, and contains no confidential third-party technical information to the best knowledge of NexantECA. Aforesaid information has not been independently verified or otherwise examined to determine its accuracy, completeness or financial feasibility. Neither NexantECA, Client nor any person acting on behalf of either assumes any liabilities with respect to the use of or for damages resulting from the use of any information contained in this Report. NexantECA does not represent or warrant that any assumed conditions will come to pass.

Copyright © by NexantECA (BVI) Ltd. 2024. All rights reserved.