

CHEMSYSTEMS **POPS PROGRAM**

Executive Report Global Commercial Analysis

A PolyOlefins Planning Service Subscription

April 2013



1st Floor, 1 King's Arms Yard, London EC2R 7AF, UK
Tel: +44 20 7950 1600 Fax: +44 20 7950 1550

This Report was prepared by Nexant, Inc ("Nexant") and is part of the PolyOlefins Planning Services Program (POPS). Except where specifically stated otherwise 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 of Nexant. Aforesaid information has not been independently verified or otherwise examined to determine its accuracy, completeness or financial feasibility. Neither NEXANT, Subscriber 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. Nexant does not represent or warrant that any assumed conditions will come to pass.

The Report is submitted on the understanding that the Subscriber will maintain the contents confidential except for the Subscriber's internal use. The Report should not be reproduced, distributed or used without first obtaining prior written consent by Nexant. Each Subscriber agrees to use reasonable effort to protect the confidential nature of the Report.

Copyright © by Nexant Inc. 2013. All rights reserved.

Contents

Section	Page
1 Global Overview	1-1
1.1 INTRODUCTION.....	1-1
1.2 BUSINESS SUMMARY	1-3
1.2.1 Economic Outlook	1-3
1.2.2 Demand	1-5
1.2.3 Supply	1-11
1.2.4 Trade	1-16
1.3 MARKET DYNAMICS FORECASTING METHODOLOGY	1-19
1.3.1 Capacity Availability and Forecasting.....	1-19
1.3.2 End-Use Consumption Forecasting.....	1-19
1.3.3 Monomer Consumption Forecasting.....	1-22
1.3.4 Production and Trade Forecasting	1-23
Appendix A - Global Overview	A-1
2 North America	2-1
2.1 REGIONAL SUMMARY.....	2-1
2.1.1 Regional Economies.....	2-1
2.1.2 Supply	2-2
2.1.3 Consumption	2-4
2.1.4 Trade	2-4
2.2 CANADA.....	2-6
2.2.1 Economic Overview.....	2-6
2.2.2 Supply and Project Overview.....	2-6
2.2.3 Market Overview and Key Drivers	2-7
2.3 MEXICO.....	2-9
2.3.1 Economic Overview.....	2-9
2.3.2 Supply and Project Overview.....	2-10
2.3.3 Market Overview and Key Drivers	2-10
2.4 UNITED STATES	2-13
2.4.1 Economic Overview.....	2-13
2.4.2 Supply and Project Overview.....	2-14
2.4.3 Market Overview and Key Drivers	2-16
Appendix B - North America	B-1
3 South America, Central America and Caribbean	3-1
3.1 REGIONAL SUMMARY	3-1
3.1.1 Regional Economics.....	3-1

3.1.2	Supply	3-2
3.1.3	Consumption	3-5
3.1.4	Trade	3-5
3.2	ARGENTINA	3-8
3.2.1	Economic Overview.....	3-8
3.2.2	Supply and Project Overview.....	3-9
3.2.3	Market Overview and Key Drivers	3-9
3.3	BRAZIL	3-12
3.3.1	Economic Overview.....	3-12
3.3.2	Supply and Project Overview.....	3-13
3.3.3	Market Overview and Key Value Drivers.....	3-14
3.4	VENEZUELA	3-17
3.4.1	Economic Overview.....	3-17
3.4.2	Supply and Project Overview.....	3-18
3.4.3	Market Overview and Key Drivers	3-19
3.5	OTHER SOUTH AMERICA.....	3-20
3.5.1	Economic Overview.....	3-20
3.5.2	Supply and Project Overview.....	3-25
3.5.3	Market Overview and Key Drivers	3-26
3.6	CENTRAL AMERICA AND THE CARIBBEAN.....	3-27
3.6.1	Economic Overview.....	3-27
3.6.2	Supply and Project Overview.....	3-27
3.6.3	Market Overview and Key Drivers	3-28
Appendix C - South America		C-1
4	Western Europe.....	4-1
4.1	REGIONAL ECONOMICS.....	4-1
4.2	SUPPLY	4-4
4.2.1	Polyolefin Capacity Developments.....	4-5
4.2.2	LDPE.....	4-6
4.2.3	LLDPE	4-7
4.2.4	HDPE	4-7
4.2.5	Polypropylene	4-8
4.3	CONSUMPTION.....	4-9
4.3.1	Second Generation	4-12
4.4	TRADE	4-15
Appendix D - Western Europe.....		D-1
5	Central Europe.....	5-1
5.1	REGIONAL SUMMARY.....	5-1

5.1.1	Economic Overview.....	5-1
5.1.2	Supply	5-2
5.1.3	Consumption	5-5
5.1.4	Trade	5-8
5.2	BULGARIA	5-9
5.2.1	Economic Overview.....	5-9
5.2.2	Supply and Project Overview.....	5-9
5.2.3	Market Overview and Key Drivers	5-10
5.3	CZECH REPUBLIC	5-11
5.3.1	Economic Overview.....	5-11
5.3.2	Supply and Project Overview.....	5-11
5.3.3	Market Overview and Key Drivers	5-12
5.4	HUNGARY	5-13
5.4.1	Economic Overview.....	5-13
5.4.2	Supply and Project Overview.....	5-13
5.4.3	Market Overview and Key Drivers	5-14
5.5	POLAND	5-15
5.5.1	Economic Overview.....	5-15
5.5.2	Supply and Project Overview.....	5-15
5.5.3	Market Overview and Key Drivers	5-16
5.6	ROMANIA.....	5-17
5.6.1	Economic Overview.....	5-17
5.6.2	Supply and Project Overview.....	5-17
5.6.3	Market Overview and Key Drivers	5-18
5.7	SLOVAKIA	5-19
5.7.1	Economic Overview.....	5-19
5.7.2	Supply and Project Overview.....	5-19
5.7.3	Market Overview and Key Drivers	5-20
5.8	SOUTHERN CENTRAL EUROPE.....	5-21
5.8.1	Economic Overview.....	5-21
5.8.2	Supply and Project Overview.....	5-22
5.8.3	Market Overview and Key Drivers	5-23
5.9	BALTIC STATES.....	5-24
5.9.1	Economic Overview.....	5-24
5.9.2	Supply and Project Overview.....	5-24
Appendix E - Central Europe		E-1
6	Eastern Europe.....	6-1
6.1	ECONOMIC OVERVIEW	6-1

6.1.1	Supply	6-2
6.1.2	Consumption	6-4
6.1.3	Trade	6-7
6.2	RUSSIA	6-9
6.2.1	Economic Overview.....	6-9
6.2.2	Supply and Project Overview.....	6-10
6.2.3	Market Overview and Key Drivers	6-14
6.3	OTHER EASTERN EUROPE	6-16
6.3.1	Economic Overview.....	6-16
6.3.2	Supply and Project Overview.....	6-17
6.3.3	Market Overview and Key Drivers	6-18
Appendix F - Eastern Europe		F-1
Appendix G - Europe.....		G-1
7	Middle East.....	7-1
7.1	ECONOMIC OVERVIEW	7-1
7.1.1	Regional Economies.....	7-2
7.1.2	Supply	7-4
7.1.3	Consumption	7-5
7.1.4	Trade	7-8
7.2	IRAN.....	7-10
7.2.1	Economic Overview.....	7-10
7.2.2	Supply and Project Overview.....	7-12
7.2.3	Market Overview and Key Drivers	7-14
7.3	IRAQ.....	7-15
7.3.1	Economic Overview.....	7-15
7.3.2	Supply and Project Overview.....	7-16
7.3.3	Market Overview and Key Drivers	7-16
7.4	ISRAEL.....	7-17
7.4.1	Economic Overview.....	7-17
7.4.2	Supply and Project Overview.....	7-17
7.4.3	Market Overview and Key Drivers	7-18
7.5	KUWAIT	7-19
7.5.1	Economic Overview.....	7-19
7.5.2	Supply and Project Overview.....	7-20
7.5.3	Market Overview and Key Drivers	7-20
7.6	QATAR.....	7-21
7.6.1	Economic Overview.....	7-21
7.6.2	Supply and Projects Overview	7-22

7.6.3	Market Overview and Key Drivers	7-23
7.7	SAUDI ARABIA	7-24
7.7.1	Economic Overview.....	7-24
7.7.2	Supply and Project Overview.....	7-25
7.7.3	Market Overview and Key Drivers	7-27
7.8	TURKEY	7-28
7.8.1	Economic Overview.....	7-28
7.8.2	Supply and Project Overview.....	7-29
7.8.3	Market Overview and Key Drivers	7-30
7.9	UNITED ARAB EMIRATES.....	7-32
7.9.1	Economic Overview.....	7-32
7.9.2	Supply and Project Overview.....	7-33
7.9.3	Market Overview and Key Drivers	7-33
7.10	OMAN	7-34
7.10.1	Economic Overview.....	7-34
7.10.2	Supply and Project Overview.....	7-34
7.10.3	Market Overview and Key Drivers	7-35
7.11	OTHER MIDDLE EAST	7-36
7.11.1	Bahrain	7-36
7.11.2	Jordan.....	7-37
7.11.3	Syria	7-38
7.11.4	Lebanon.....	7-39
7.11.5	Yemen	7-40
Appendix H - Middle East.....		H-1
8	Africa.....	8-1
8.1	REGIONAL SUMMARY.....	8-1
8.1.1	Regional Economies.....	8-1
8.1.2	Supply	8-2
8.1.3	Consumption	8-3
8.1.4	Trade	8-7
8.2	ALGERIA	8-8
8.2.1	Economic Overview.....	8-8
8.2.2	Supply and Project Overview.....	8-8
8.2.3	Market Overview and Key Drivers	8-9
8.3	EGYPT.....	8-10
8.3.1	Economic Overview.....	8-10
8.3.2	Supply and Project Overview.....	8-10
8.3.3	Market Overview and Key Drivers	8-11

8.4	LIBYA	8-13
8.4.1	Economic Overview.....	8-13
8.4.2	Supply and Project Overview.....	8-13
8.4.3	Market Overview and Key Drivers	8-14
8.5	NIGERIA	8-15
8.5.1	Economic Overview.....	8-15
8.5.2	Supply and Project Overview.....	8-15
8.5.3	Market Overview and Key Drivers	8-16
8.6	REPUBLIC OF SOUTH AFRICA	8-17
8.6.1	Economic Overview.....	8-17
8.6.2	Supply and Project Overview.....	8-17
8.6.3	Market Overview and Key Drivers	8-18
8.7	OTHER AFRICA.....	8-20
8.7.1	Kenya	8-20
8.7.2	Morocco	8-21
8.7.3	Sudan.....	8-22
8.7.4	Tanzania.....	8-23
8.7.5	Tunisia.....	8-24
8.7.6	Uganda	8-25
8.7.7	Zimbabwe.....	8-26
Appendix I - Africa		I-1
9	Japan	9-1
9.1	ECONOMIC OVERVIEW	9-1
9.2	MARKET OVERVIEW AND KEY DRIVERS.....	9-2
9.2.1	Supply	9-3
9.2.2	Consumption	9-4
9.2.3	Trade	9-5
Appendix J - Japan		J-1
10	Asia Pacific.....	10-1
10.1	REGIONAL OVERVIEW	10-1
10.1.1	Regional Economies.....	10-1
10.1.2	Supply	10-2
10.1.3	Consumption	10-4
10.1.4	Trade	10-7
10.2	AUSTRALIA	10-8
10.2.1	Economic Overview.....	10-8
10.2.2	Supply and Project Overview.....	10-8
10.2.3	Market Overview and Key Drivers	10-8

10.3	CHINA	10-10
10.3.1	Economic Overview.....	10-10
10.3.2	Supply and Project Overview.....	10-11
10.3.3	Market Overview and Key Drivers	10-15
10.4	INDIA	10-19
10.4.1	Economic Overview.....	10-19
10.4.2	Supply and Project Overview.....	10-20
10.4.3	Market Overview and Key Drivers	10-21
10.5	INDONESIA	10-25
10.5.1	Economic Overview.....	10-25
10.5.2	Supply and Project Overview.....	10-25
10.5.3	Market Overview and Key Drivers	10-26
10.6	MALAYSIA.....	10-27
10.6.1	Economic Overview.....	10-27
10.6.2	Supply and Project Overview.....	10-27
10.6.3	Market Overview and Key Drivers	10-28
10.7	NEW ZEALAND.....	10-29
10.7.1	Economic Overview.....	10-29
10.7.2	Supply and Project Overview.....	10-29
10.7.3	Market Overview and Key Drivers	10-29
10.8	PHILIPPINES	10-30
10.8.1	Economic Overview.....	10-30
10.8.2	Supply and Project Overview.....	10-30
10.8.3	Market Overview and Key Drivers	10-31
10.9	SINGAPORE	10-32
10.9.1	Economic Overview.....	10-32
10.9.2	Supply and Project Overview.....	10-32
10.9.3	Market Overview and Key Drivers	10-33
10.10	SOUTH KOREA.....	10-34
10.10.1	Economic Overview.....	10-34
10.10.2	Supply and Project Overview.....	10-34
10.10.3	Market Overview and Key Drivers	10-36
10.11	TAIWAN	10-39
10.11.1	Economic Overview.....	10-39
10.11.2	Supply and Project Overview.....	10-39
10.11.3	Market Overview and Key Drivers	10-40
10.12	THAILAND	10-43
10.12.1	Economic Overview.....	10-43

10.12.2 Supply and Project Overview.....	10-43
10.12.3 Market Overview and Key Drivers	10-44
10.13 OTHER ASIA	10-46
10.13.1 Pakistan	10-47
10.13.2 Vietnam.....	10-49
10.13.3 Bangladesh	10-52
10.13.4 Sri lanka	10-53
10.13.5 Others	10-54
Appendix K - Asia Pacific	K-1

Figure	Page
1.1 World Economic Performance	1-4
1.2 World Economic Performance and Outlook	1-4
1.3 Global Polyolefin Demand.....	1-5
1.4 Polyethylene Demand Growth	1-6
1.5 Global Combined LLDPE and LDPE Consumption Growth.....	1-7
1.6 Global HDPE Consumption Growth.....	1-8
1.7 Polypropylene Demand Growth.....	1-9
1.8 Global Polypropylene Consumption Growth.....	1-10
1.9 Polyolefin Capacity Growth.....	1-11
1.10 Polyolefins Capacity Growth by Region.....	1-12
1.11 LDPE Capacity Additions.....	1-13
1.12 LLDPE and HDPE Capacity Additions	1-14
1.13 Polypropylene Capacity Additions.....	1-15
1.14 Polyethylene Net Trade – 2000-2030.....	1-16
1.15 Polypropylene Net Trade – 2000-2030	1-18
1.16 End-Use Consumption Drivers	1-20
1.17 Monomer Consumption Drivers.....	1-22
1.18 Trade Considerations	1-23
2.1 North American GDP Outlook.....	2-2
2.2 North American Polyolefin Net Trade - 2012.....	2-5
3.1 South America, Central America and Caribbean GDP Outlook.....	3-1
3.2 South American Polyolefin Net Trade.....	3-6
4.1 West European Economic Growth.....	4-1
4.2 Chemical Production Index.....	4-2
4.3 Construction Output Index	4-3
4.4 Polyolefin Capacity by Producer - 2012	4-5
4.5 Polyethylene Sack and Bag Imports, Western Europe.....	4-11
4.6 Metallocene LLDPE Film Applications – 2012.....	4-13
4.7 Polypropylene Net Trade	4-16
4.8 West European Net Trade	4-16
5.1 Central European Economic Growth	5-2
5.2 Polyolefins Capacity by Producer – 2012	5-4
5.3 LDPE Consumption	5-5
5.4 LLDPE Consumption.....	5-6
5.5 HDPE Consumption.....	5-7
5.6 Polypropylene Consumption.....	5-7
5.7 Regional Net Polyolefins Trade	5-8
6.1 East European Economic Growth	6-2

6.2	Polyolefins Capacity by Producer - 2012.....	6-3
6.3	LDPE Consumption	6-5
6.4	LLDPE Consumption.....	6-6
6.5	HDPE Consumption.....	6-6
6.6	Polypropylene Consumption.....	6-7
6.7	Regional Net Polyolefins Trade – 2000-2030.....	6-8
7.1	Impact of Crude Oil Price Changes on GDP of Major Middle Eastern Oil Exporting Countries	7-2
7.2	Economic Growth - Major Middle Eastern Countries	7-3
7.3	Polyolefin Capacity Additions in Middle East.....	7-4
7.4	LDPE Consumption and Growth in Major Middle Eastern Markets	7-6
7.5	LLDPE Consumption and Growth in Major Middle Eastern Markets.....	7-6
7.6	HDPE Consumption and Growth in Major Middle Eastern Markets.....	7-7
7.7	Polypropylene Consumption and Growth in Middle Eastern Markets	7-8
7.8	Middle Eastern Polyolefin Net Trade.....	7-9
7.9	Middle Eastern Polyolefin Net Trade.....	7-9
7.10	West Ethylene Pipeline	7-13
8.1	Economic Growth - Major African Countries.....	8-1
8.2	LDPE Consumption and Growth in Major African Markets	8-4
8.3	LLDPE Consumption and Growth in Major African Markets.....	8-4
8.4	HDPE Consumption and Growth in Major African Markets.....	8-5
8.5	Polypropylene Consumption and Growth in Major African Markets.....	8-6
8.6	African Polyolefin Net Trade - 2012.....	8-7
9.1	Japanese Economic Growth	9-1
9.2	Japanese Net Trade – 2000-2030	9-6
10.1	Major Asian Countries – Economic Outlook.....	10-2
10.2	LDPE Consumption and Growth in Major Asian Markets	10-5
10.3	LLDPE Consumption and Growth in Major Asian Markets.....	10-5
10.4	HDPE Consumption and Growth in Major Asian Markets.....	10-6
10.5	Polypropylene Consumption and Growth in Major Asian Markets.....	10-6
10.6	Asian Polyolefin Net Trade.....	10-7
10.7	Polyolefin Capacity Expansion in China.....	10-11

Table	Page
2.1 United States Polyolefins Consumption Growth/(Decline)	2-16