

Abiclor Meeting - Sao Paulo
12 November 2014

Global Chlor-alkali Markets: Have you heard the news about...

Speaker : Janet Wright

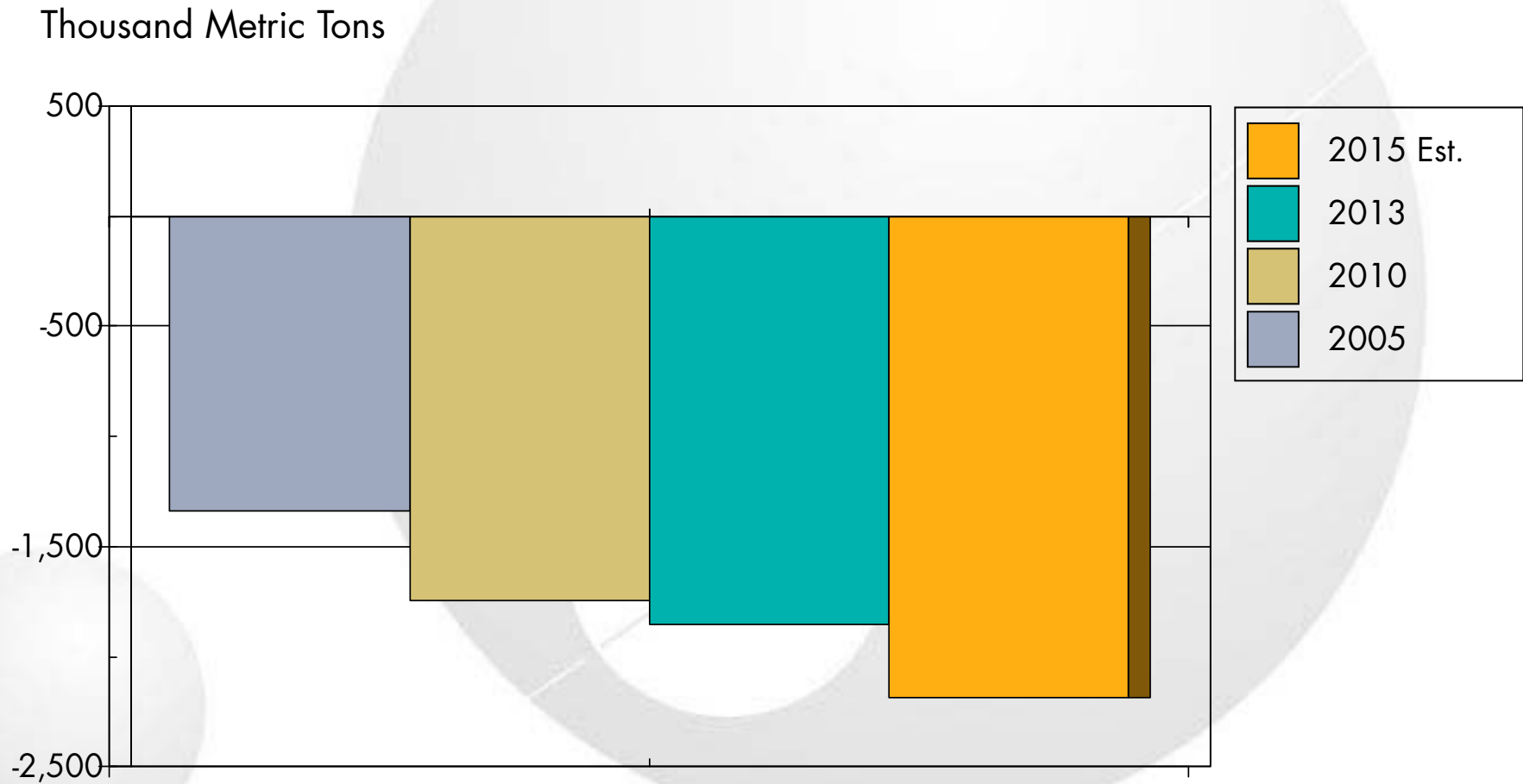
Company : Tecnon OrbiChem

Country : UK

AROUND THE WORLD IN... 45 MINUTES?



Figure 1 CAUSTIC SODA – SOUTH AMERICA NET TRADE



Source: Tecnon OrbiChem

Figure 2 SHARES OF CHLOR-ALKALI CAPACITY IN SOUTH AMERICA

<i>Producer</i>	<i>Location</i>	<i>% 2013</i>	<i>% 2014*</i>	<i>Comments</i>
Solvay Indupa	Argentina Brazil	13	0	Being sold to Braskem
Braskem	Brazil	20	33	Will now have assets in Argentina
Dow	Brazil	17	17	
Carbocloro	Brazil	15	15	100% owned by Unipar
Quimpac	Peru Colombia Ecuador	9	11	Now has assets in Brazil after buying Pan Americana

* Assuming all deals happen

Source: Tecnon OrbiChem

Figure 3

CHLOR-ALKALI PROJECTS IN THE US

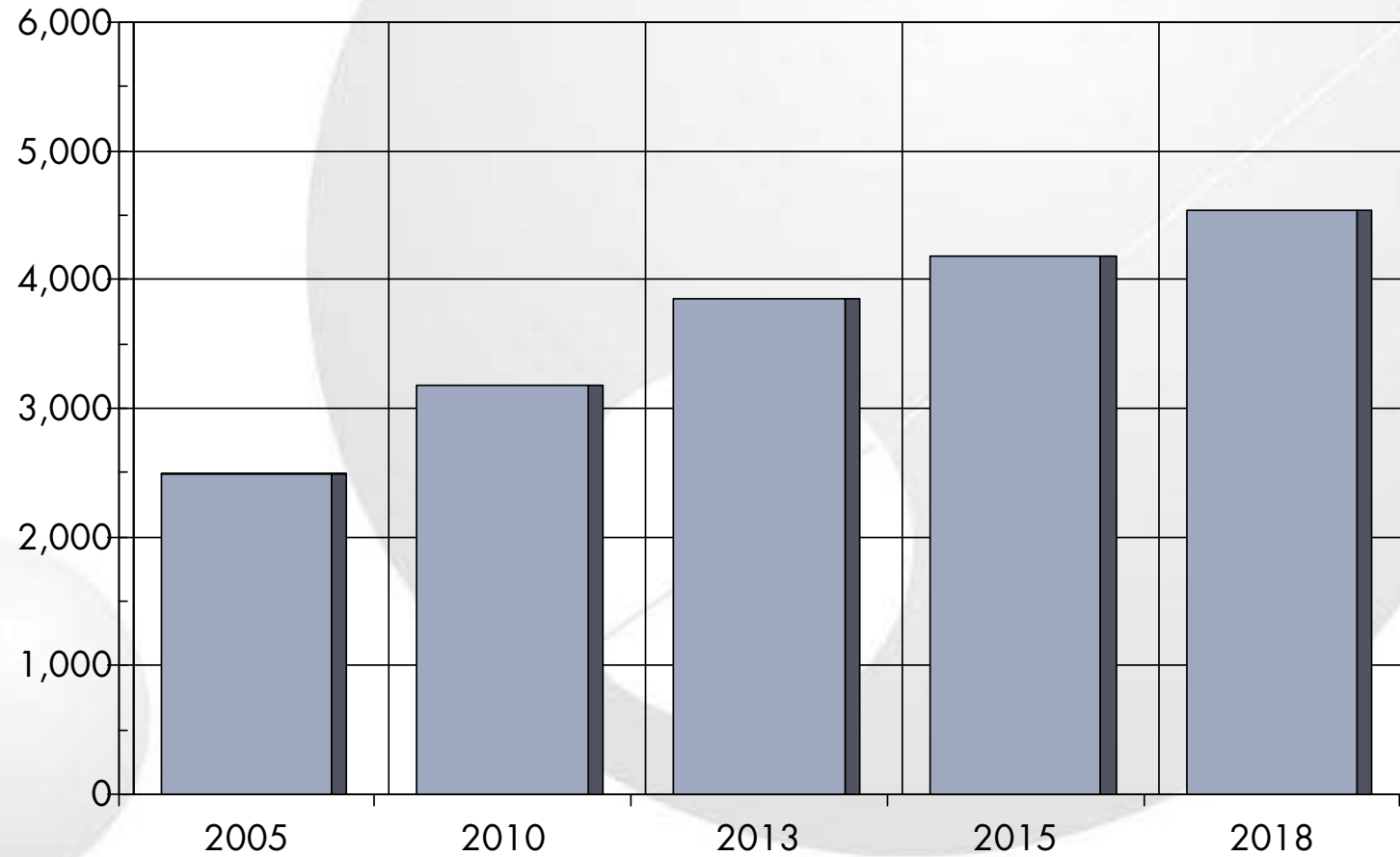
<i>Company</i>	<i>Ktons</i>	<i>Comments</i>
Molycorp	108	Captive Use
Kuehne Chems	27	Salt to Bleach
FSTI/DPC	6	Salt to Bleach
HF Chlor-alkali	83	Cargill corn mill in Eddyville
K2	50	Vernon, CA
Olin (Augusta & Charleston)	-132	Conversions (net reduction)
OxyChem	165	Dupont
Dow/Mitsui JV	800	
Dow	-800	Phased closure of older cells as JV on line
Westlake	350	
Shintech	180	
Skyonics	90	

Source: Tecnon OrbiChem

Figure 4

CHLORINE CAPACITY IN MIDDLE EAST & AFRICA

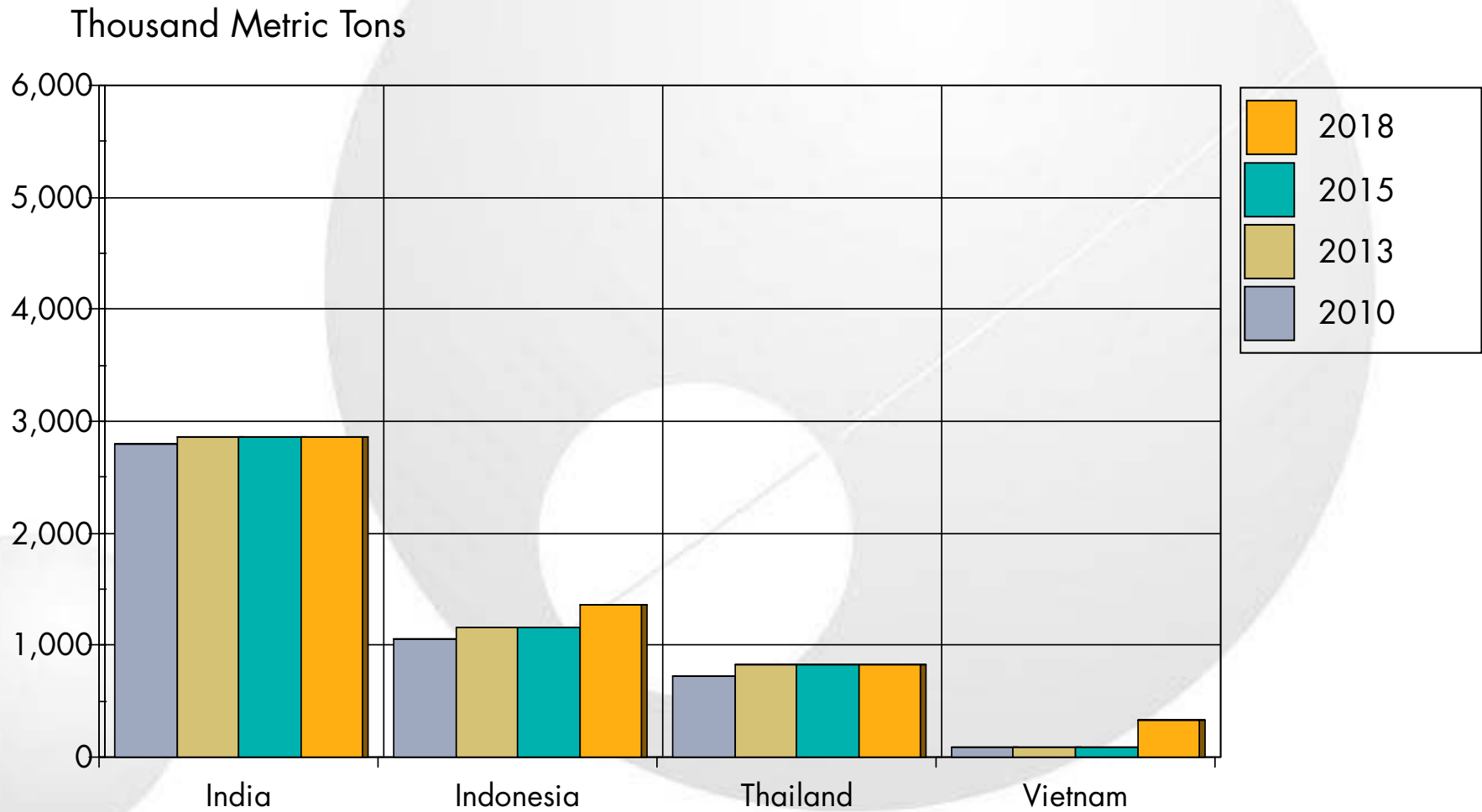
Thousand Metric Tons



Source: Tecnon OrbiChem

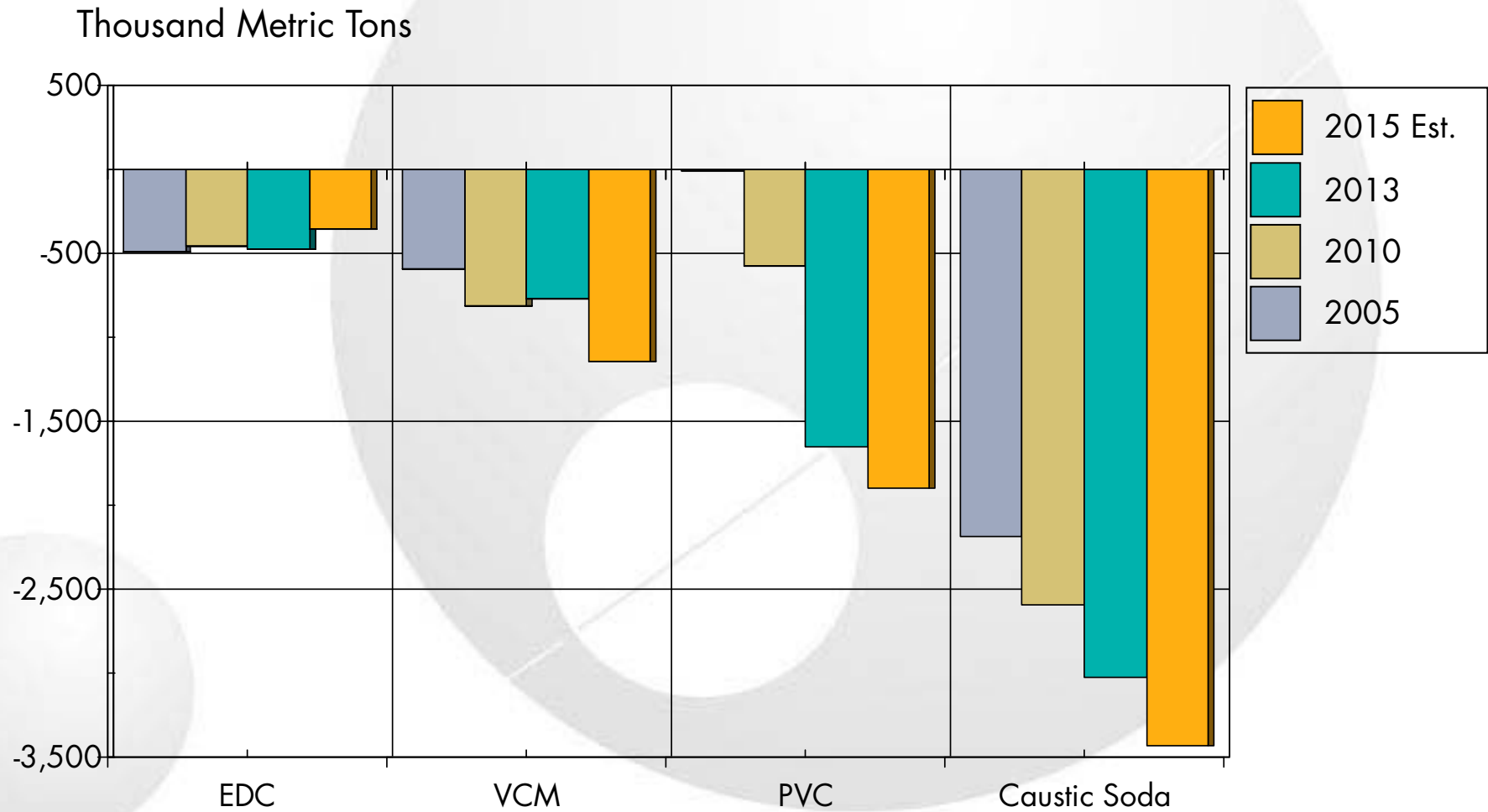
Figure 5

CHLORINE CAPACITY IN SOUTH & SOUTHEAST ASIA



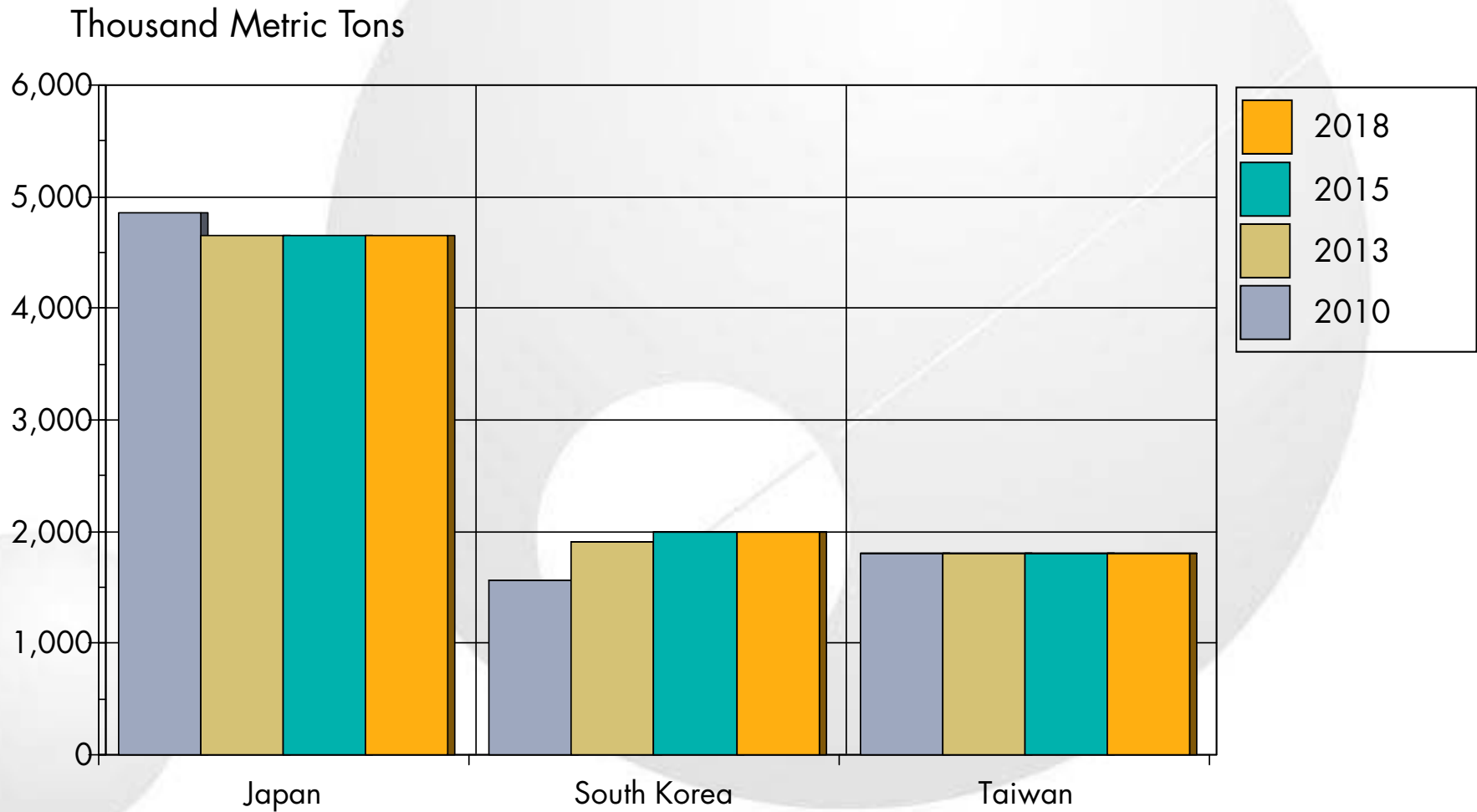
Source: Tecnon OrbiChem

Figure 6 SOUTH & SOUTHEAST ASIA - NET TRADE



Source: Tecnon OrbiChem

Figure 7 CHLORINE CAPACITY IN NORTHEAST ASIA



Source: Tecnon OrbiChem



Figure 8

CHINA - CHLORINE CAPACITY FACTS

- 325 Producers in 2013 across ~500 sites
- Only 4% have >500 ktpa installed capacity
- 17% have between 200 ktpa and 500 ktpa
- 17% with capacity of 100-200 ktpa

Source: Tecnon OrbiChem

Figure 9

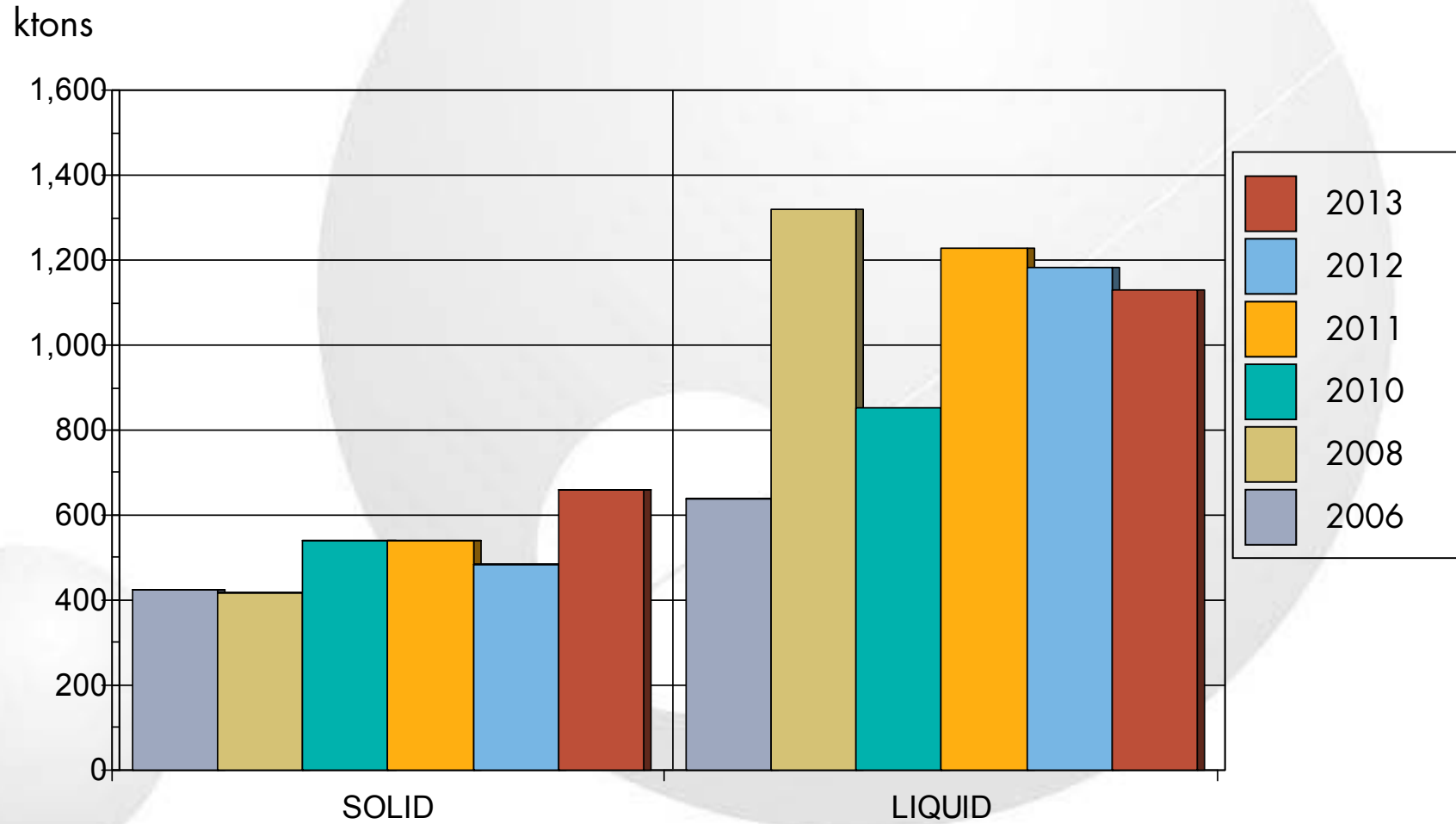
CHINESE MAJOR CHLORINE PRODUCERS 2014 (Ktons)

Xinjiang Zhongtai Chemical	1,455
Xinjiang Tianye Chemical	818
Beiyuan Chemical	801
Shanghai Chlor-Alkali Chemical (SCAC)	764
Dongying Jinling Chemical Industry	746
SP Chemicals	669
Dongying Xiefa Chemical	563
Henan Haohua Yuhang Chemical	563
Tianjin Dagu Chemical	563
Fuhua Group	546
Zhejiang Juhua Chemical	535
Henan Shenma Chlor-Alkali	518
Shandong Xinfu Chemical	510

Source: Tecnon OrbiChem

Figure 10

CHINESE CAUSTIC SODA EXPORTING PROFILE



Source: Tecnon OrbiChem



Figure 11 EUROPE – SOME CURRENT ISSUES...

- Mergers & Acquisitions
- New rules on mercury phase-out... now 2017!
- Does this leave the door open for imports?

Source: Tecnon OrbiChem

Figure 12a

WEST EUROPE – MERCURY CAPACITY (1)

<i>Country</i>	<i>Company</i>	<i>Ktons</i>	<i>Date</i>	<i>Comments</i>
Belgium	Ineos	* 130		
Czech Rep	Spolana	135	2017	
Czech Rep	Spolchemie	61	2015	
Finland	Akzo Nobel	40		
France	PPC (ICIG)	* 72	2015	
France	Harbonnieres	23		
France	PC de Loos	18	2015	
France	Kem One	166	2017	
Germany	Akzo Nobel	125		Ibbenburen – JV for KOH
Germany	BASF	170		
Germany	Evonik	* 137		JV for KOH at Ibbenburen

* Some KOH

Source: Tecnon OrbiChem

NB – Dow Stade = Asbestos Diaphragms

Figure 12b**WEST EUROPE – MERCURY CAPACITY (2)**

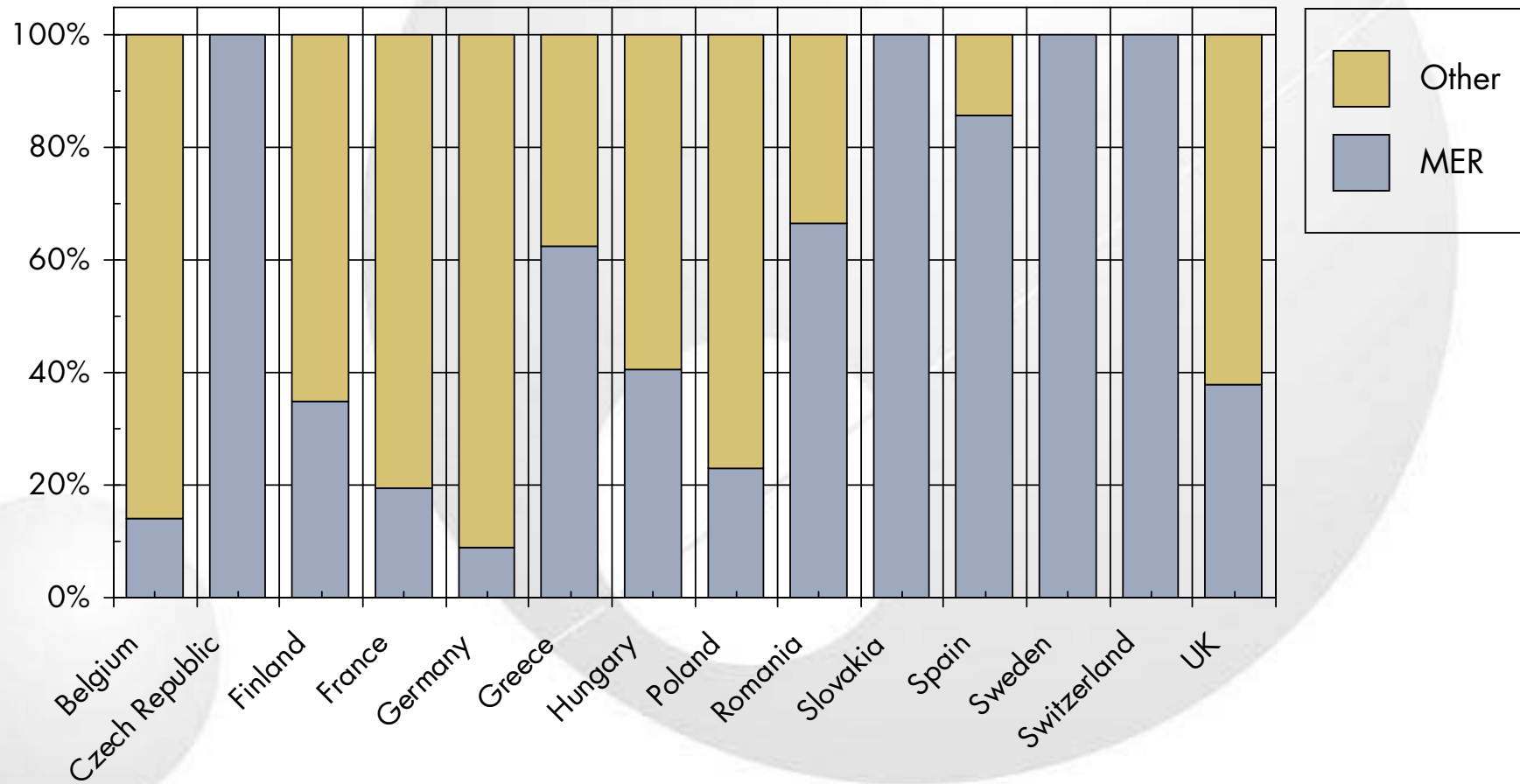
<i>Country</i>	<i>Company</i>	<i>Ktons</i>	<i>Date</i>	<i>Comments</i>
Hungary	BorsodChem	131	2017	
Italy	Hydrochem-Italia (ICIG)	42		
Poland	PCC Rokita	78	2015	
Romania	Oltchim	186		Insolvency Proceedings
Slovakia	Novacke (Fortischem)	76	2017	
Spain	CUF (Elnosa)	34		
Spain	Ercros	270		
Spain	Hispavic (Solvay)	218		
Spain	Solvay	63		
Sweden	Ineos	120		?2015/2017
Switzerland	CABB	27		
UK	Ineos	277		

Source: Tecnon OrbiChem

Figure 13

'MERCURY' CAPACITY IN WEST EUROPE 2014

Percentage

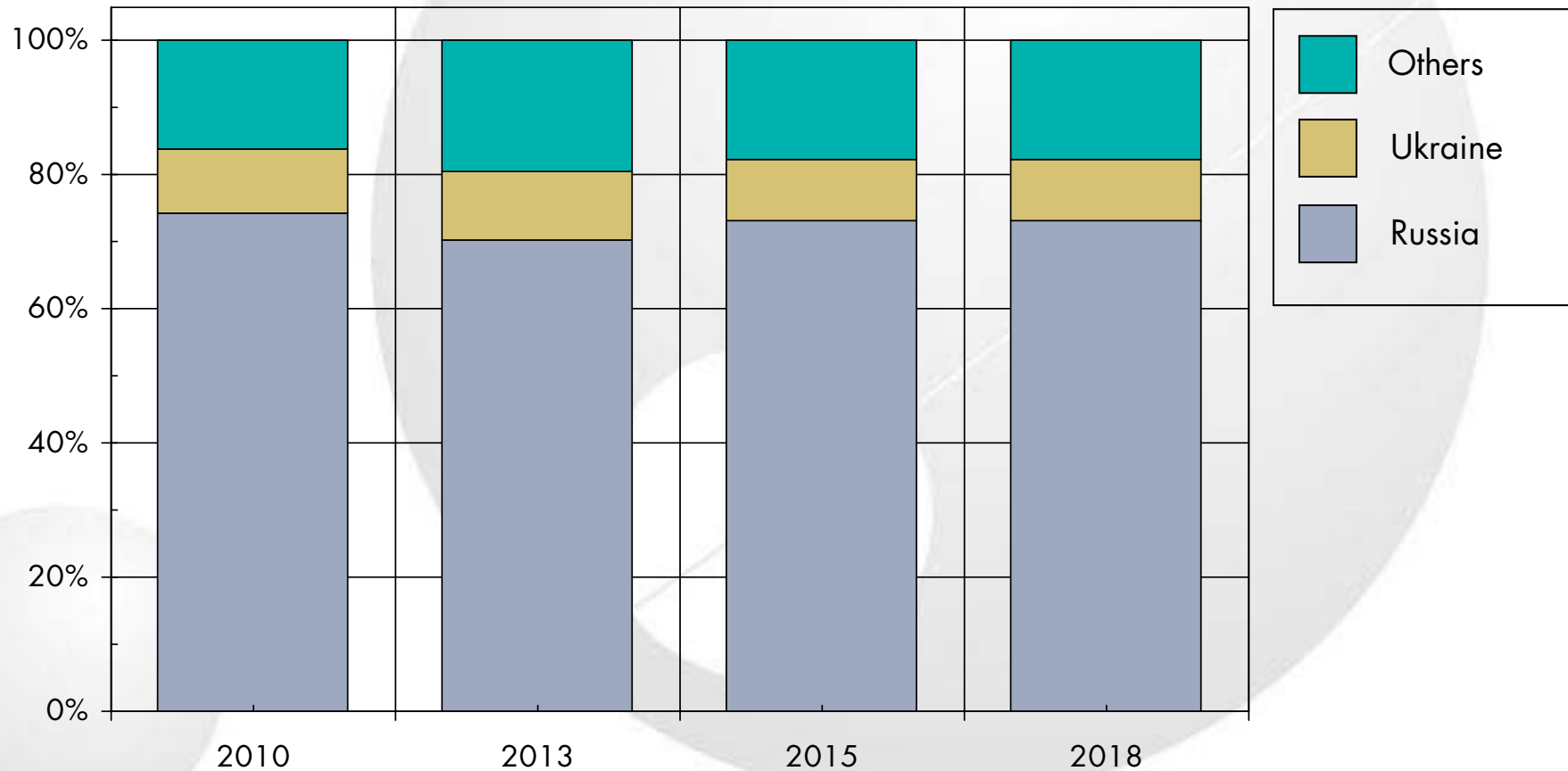


Source: Tecnon OrbiChem

Figure 14

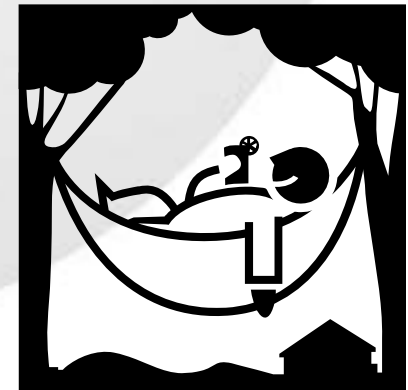
EAST EUROPEAN REGIONAL CAPACITY SPLIT 2014

Percentage



Source: Tecnon OrbiChem

AROUND THE WORLD IN... 45 MINUTES?





.....your source of expert
chemical industry knowledge

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