Downstream Opportunities with Sadara

Creating Value
Through Chemistry

November 11, 2013

Agenda

- Overview on Sadara
- Sadara Value Chain
- PlasChem Park
- Overview on Differentiated Opportunities
- Glimpse View on Current Investors
- Closing Remarks

Birth of Sadara

October, 2011

Sadara Overview

- US$**20** Billion investment;
- **First** complex to crack Naphtha in GCC;
- **Largest** chemicals complex ever constructed in a single phase: **26** world scale plants with over **3 million** metric tons of capacity;
- **Differentiated Product Slate: 14** out of the **26** plants are new to KSA;
- **"Dedicated Off-Takers"** through PlasChem Park;
- Construction began in 3Q 2011
  - First products in 2015
  - Full production in 2016

Sadara is Rising up in Jubail

Cracker Furnaces

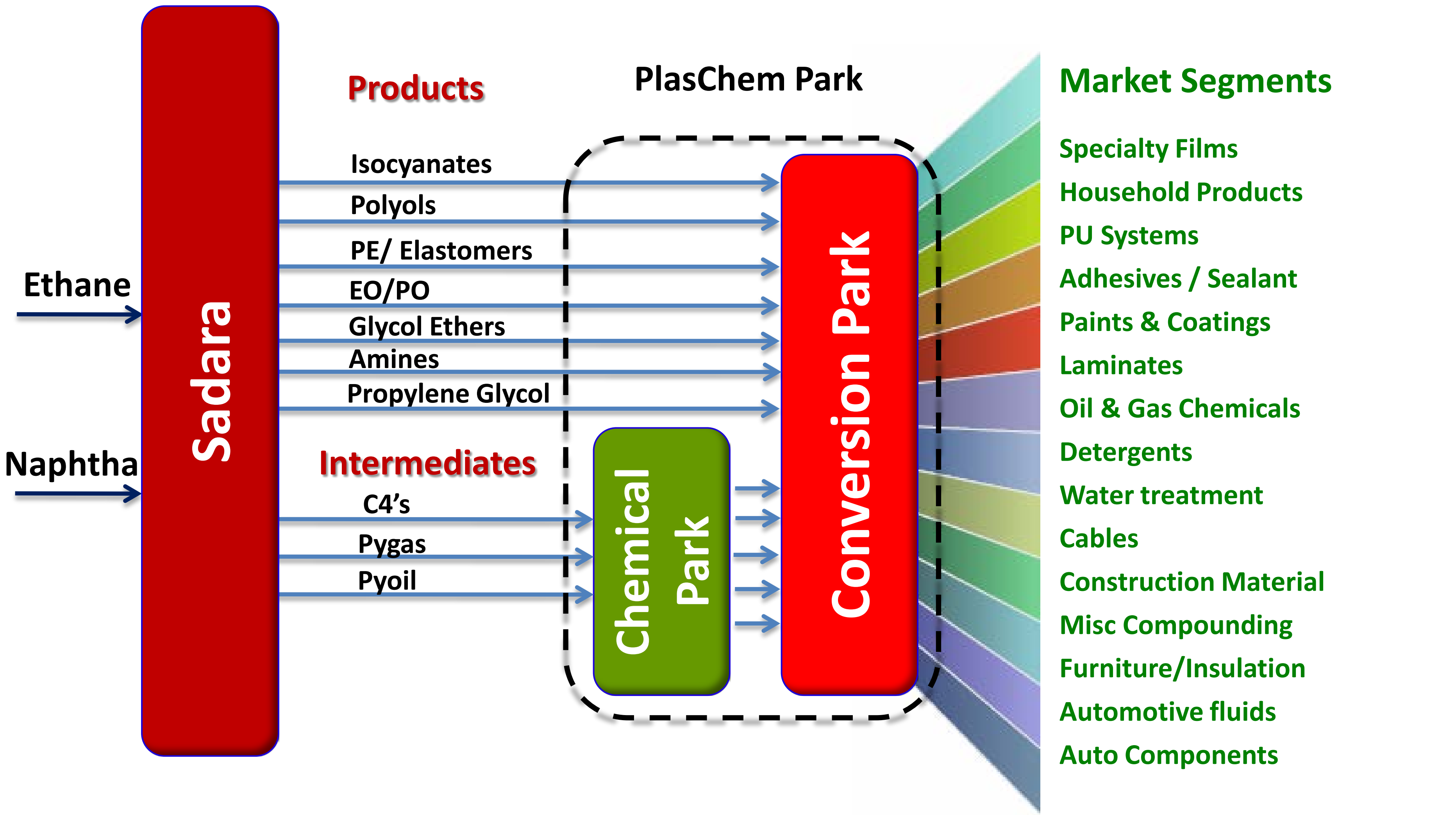
Sadara is Rising up in Jubail

PMDI unit

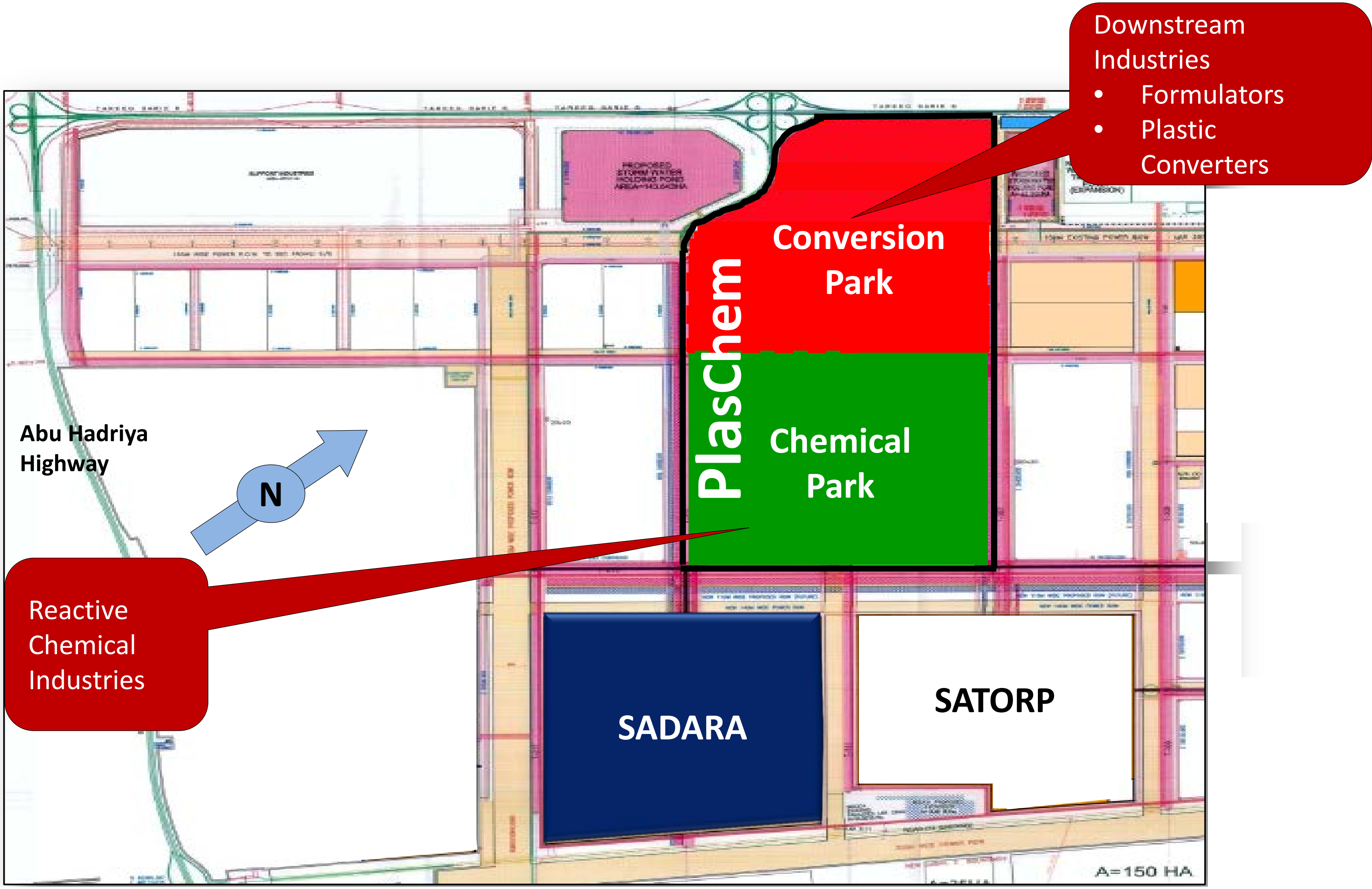
Sadara is Rising up in Jubail

TDI Dome

Sadara Value Parks Opportunities



PlasChem Site & Layout



EO/PO Opportunities

Detergents

Construction Material

Shampoos

Cosmetics

Water Treatment Chemicals

Oil & Gas Chemicals

- **66% of all EO produced globally goes into MEG which is a commodity**
- **Sadara makes purified EO for a wide variety of differentiated applications**
- **Oxide derivatives for Oil & Gas is one of our biggest clusters in PlasChem**

PE & Elastomers Opportunities

Hygiene films

FFS bags

Stretch warp

Containers

Food packaging

- **First production of highly differentiated C8 – LLDPE in the Kingdom**
- **High toughness and puncture resistance means better yield**

Amines Opportunities

Gas treatment

Personal Care

Wet strength resin

Corrosion Inhibitors

Fabric Softener

- **Sadara will produce both ethylene amines and ethanol amines**
- **These amines will be produced in Kingdom first time and are key feed stocks for conversions to wide variety of products**

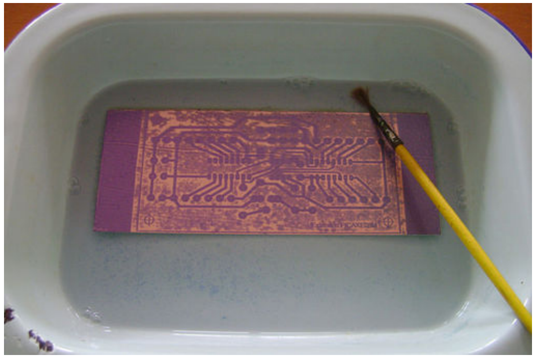
Glycol Ether Opportunities

Brake Fluid

Paints & Coatings

Ink Formulation

Electronics



Cleaning Formulations

- **Glycol Ethers have a range of solvency, water solubilities and volatilities allowing wide formulating opportunities**
- **Additional benefits are low odor, low toxicity, good biodegradability and favorable environmental regulatory status**

Polyurethane Opportunities

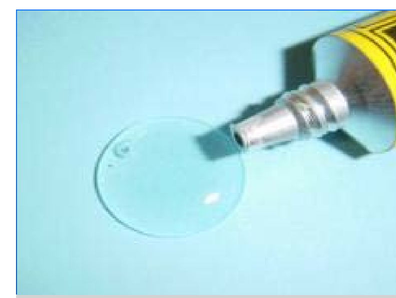
Coating

Insulation

Foams

Automotive Parts

Adhesives



- **Isocyanates and specialty polyols will be made in KSA for the first time.**
- **Insulation, coatings, and automotive applications fit well with Industry clusters targeted by the Kingdom.**
- **Many applications will focus on regional demand as low density foams are inefficient to export**

Glimpse View on Current Investors

Sadara

Products	Markets Targeted
RO Membranes	Water Treatment
Coating Additives	Industrial & Architectural Paint
EO/PO Derivatives Cluster	Oil & Gas, Water Treatment Chemicals Home and Personal Care, Construction Material, Detergent
PU Derivatives Cluster	Insulations, Furniture & Auto foams Adhesive/Sealant
BGE Derivatives	Brake Fluids, Solvents
PE Specialty Applications	Hygiene Films
Amines Derivatives	Gas Treatment

Collaboration of Local Organizations

- **Wa'ed LLC**
  - Support entrepreneurs and SMEs to create vale
  - Investment in downstream assets
- **Dhahran Techno Valley**
  - Integrated ecosystem to drive knowledge economy
  - Provides development , production and marketing support for innovation
  - Some EO derivatives R&D already in Place
- **King Abdullah Foundation**
  - Interested in injecting equity in selected investments

Summary

- Sadara is a game changer for the region’s chemical industry with positive impact on KSA GDP
- KSA is supporting downstream developments in many important sectors
- PlasChem Park presents a unique opportunity