Synthetic Rubber Overview

By Juan Ramon Salinas & Roxanna B. Petrovic.
International Institute of Synthetic Rubber Producers
Goa, India, March 2016
Topics

- About IISRP
- SR Market Structure
- SR Supply & Demand – Zoom in China
- SR Market Drivers
- Tire Technology Driver – Emissions Legislations
Topics

○ About IISRP

○ SR Market Structure

○ SR Supply & Demand – Zoom in China

○ SR Market Drivers

○ Tire Technology Driver – Emissions Legislations
About IISRP

Mission

.....fostering the growth and consumption of the synthetic rubber...

Members

• +50 Corporate Members
• +20 Countries
• 70% SR global production
Established in 1960...

Leadership – International President

Executive Committee

Managing Director & CEO

International President

2015-2016

Gregory Nelson

EW Copolymer
Topics

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SR Market Structure

2015 Global Capacity

- **Russia**: 1,692 kt (7%)
- **Latin America**: 851 kt (4%)
- **Europe, ME & Africa**: 3,035 kt (15%)
- **North America**: 3,167 kt (15%)
- **Asia**: 5,386 kt (27%)
- **China**: 5,731 kt (29%)

Total: 19,864 kt

Source: World Rubber Statistics 2015 - IISRP
SR Market Structure

Capacity Expansions, kt

Source: World Rubber Statistics 2015 - IISRP

India Rubber Meet 2016
SR Market Structure

2015 Global Capacity

- CR: 377 kt (2%)
- IIR: 1,539 kt (8%)
- EPDM: 1,783 kt (9%)
- IR: 979 kt (5%)
- NBR: 823 kt (4%)
- SBC: 2,534 kt (13%)
- ESBR: 4,848 kt (24%)
- SSBR: 2,004 kt (10%)
- BR: 4,977 kt (25%)

Total: 19,864 kt

Source: World Rubber Statistics 2015 - IISRP
SR Market Structure

Capacity Expansions, kt

Source: World Rubber Statistics 2015 - IISRP
SR Market Structure

2015 Major SR Producers by Capacity
(23 Companies - 80%)

Source: World Rubber Statistics 2015 - IISRP
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SR Supply & Demand

BR Supply & Demand, kt

<table>
<thead>
<tr>
<th>Year</th>
<th>Global Supply</th>
<th>Global Demand</th>
<th>Asia Supply</th>
<th>Asia Demand</th>
<th>Europe Supply</th>
<th>Europe Demand</th>
<th>Americas Supply</th>
<th>Americas Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>3,381</td>
<td>2,027</td>
<td>1,767</td>
<td>818</td>
<td>537</td>
<td>500</td>
<td>500</td>
<td>400</td>
</tr>
<tr>
<td>2014</td>
<td>3,099</td>
<td>1,767</td>
<td>1,848</td>
<td>753</td>
<td>579</td>
<td>550</td>
<td>550</td>
<td>450</td>
</tr>
<tr>
<td>2015e</td>
<td>3,140</td>
<td>1,848</td>
<td>1,767</td>
<td>693</td>
<td>609</td>
<td>579</td>
<td>550</td>
<td>450</td>
</tr>
</tbody>
</table>

BR 2015 Global Capacity = 4,977 kt (63% operating rate)

Source: Quarterly Report – IISRP.
SR Supply & Demand

BR - China, kt

Production

Demand

Exp

Imp

2015e 2014 2013

BR 2015 China Capacity = 1,740 kt (44% operating rate)

Source: IISRP - China.
ESBR 2015 Global Capacity = 4,848 kt (64% operating rate)
ESBR 2015 China Capacity = 1,450 kt (57% operating rate)
SR Supply & Demand

SSBR Supply & Demand, kt

SSBR 2015 Global Capacity = 2,004 kt (56% operating rate)

Source: Quarterly Report – IISRP.
SSBR - China, kt

SSBR 2015 China Capacity = 263 kt (22% operating rate)

Source: IISRP - China.
By the end of 2015 SR Capacity in India reached around 420 kt/year
Domestic SR producers are ramping-up production based on approvals from tire markets
India is expected to become self-sufficient between 2017 – 2018 reaching around 650 kt/year (+120 kt IIR JV Reliance/Sibur, +110 kt BR Gail).
India’s SR Consumption estimations by IISRP: 480 kt 2014, and 500 kt by the end of 2015
India is importing around 300 kt of SR, so imports will decreased as the new capacity operating rates ramps-up.
SR Consumption trend is driven by the GDP (higher exports and investor confidence boosted by new structural reforms)
SR Supply & Demand

Commodity SR Demand

- Tires & Auto: 15%
- Mechanical goods: 12%
- Other: 73%

India Rubber Meet 2016
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- Tire Technology Driver – Emissions Legislations
SR Market Drivers

- China
- End Use Markets
- NR
- Oil prices
- Over Capacity
SR Market Drivers

![Graph showing the price of Asia Butadiene in $/tonne, spot, CFR NE Asia from January 2015 to January 2016. The price peaks in 2016 and then declines.]
SR Market Drivers

- China
- Over Capacity
- NR
- End Use Markets
- Oil prices
SR Market Drivers

Capacity Expansions, kt
SR Market Drivers

- China
- NR
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SR Market Drivers

- China
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SR Market Drivers

- China
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SR Market Drivers

Tire Demand

- OE Tire Demand
- Replacement Tire Demand

- Car production
- Car Parc
SR Market Drivers

Vehicles per capita (vehicles/1000 people)

Source: Wikipedia.org
SR Market Drivers

Car Sales (millions of units)

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- **Tire Technology Driver – Emissions Legislations**
Top 5 emitting Countries and - EU 1990 - 2014

CO$_2$ emissions from fossil-fuel use and cement production in the top 5 emitting countries and the EU


Source: Emissions database for Global Atmospheric Research (European Commission).
Emergence of worldwide adoption of tire regulations and implementation of tire labeling

- Preliminary tire labeling proposed by NHTSA in March 2010 – earliest expected implementation in 2014
- Mandatory tire labeling for all new tires on sale as of November 2012
- Due to its rapidly increasing mobility, China will inevitably need regulations in the near future
- Voluntary tire labeling standards in place since 2010
- Draft of regulatory document created in 2011 – publication of directive likely to happen in the first half of 2012, implementation expected as of 2014
- Voluntary tire labeling in place since November 2011; mandatory tire labeling as of December 2012

Source: Green Tires Fact Book – Lanxess (http://ebooks.lanxess.com/Fact_Book/)
### Environmental impact of ‘Green Tires’

‘Green Tires’ are vital for sustainable future mobility
(Calculation based on a car with a gasoline engine and an average fuel consumption of 10 L/100 km)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Impact</th>
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</thead>
<tbody>
<tr>
<td>Reduced rolling resistance</td>
<td>-30 %</td>
</tr>
<tr>
<td>Reduced fuel consumption</td>
<td>-0.5 l/100 km</td>
</tr>
<tr>
<td>Reduced CO₂ emissions</td>
<td>-1.2 kg/100 km</td>
</tr>
</tbody>
</table>

**Improved environmental impact**

Source: Green Tires Fact Book – Lanxess (http://ebooks.lanxess.com/Fact_Book/)
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Thank You / आपको बहुत बहुत धन्यवाद

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