



R&D @ JSW
First R&D Operating Committee Meeting



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R&D Focus areas @ JSW

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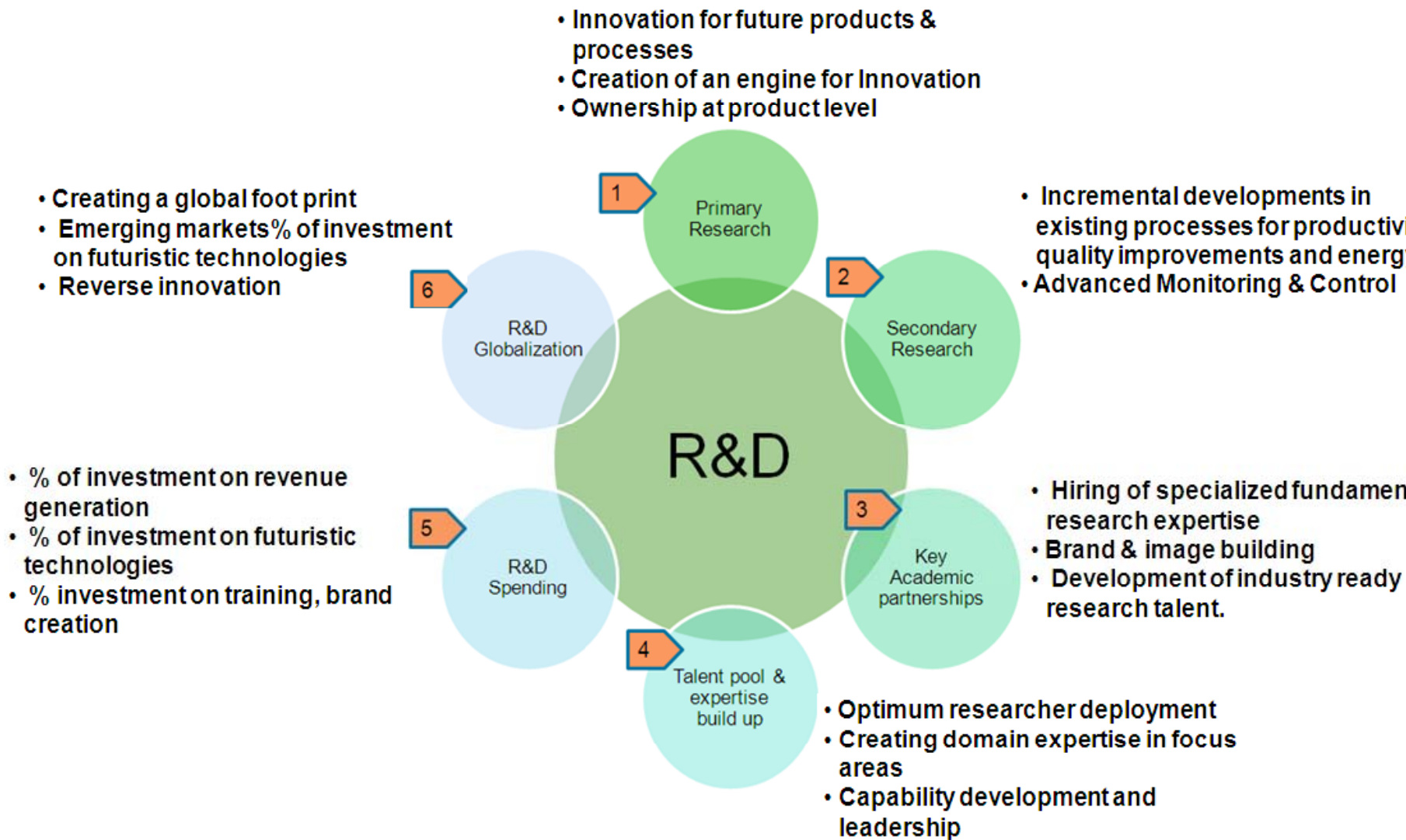
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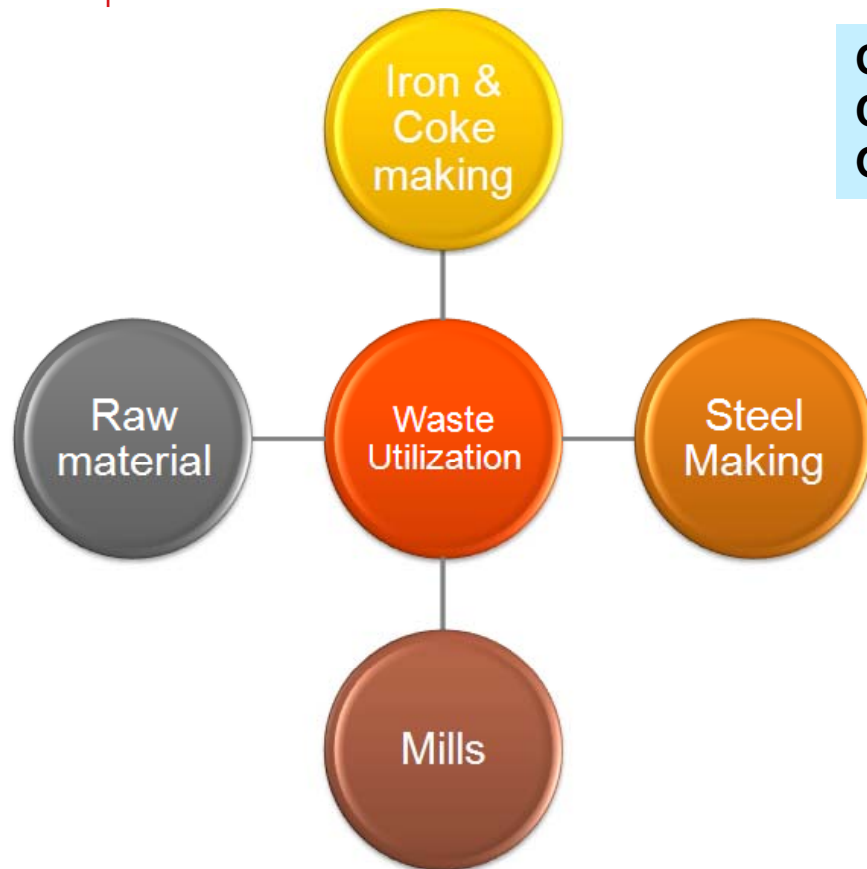


Steel Industry R&D – Functional requirements



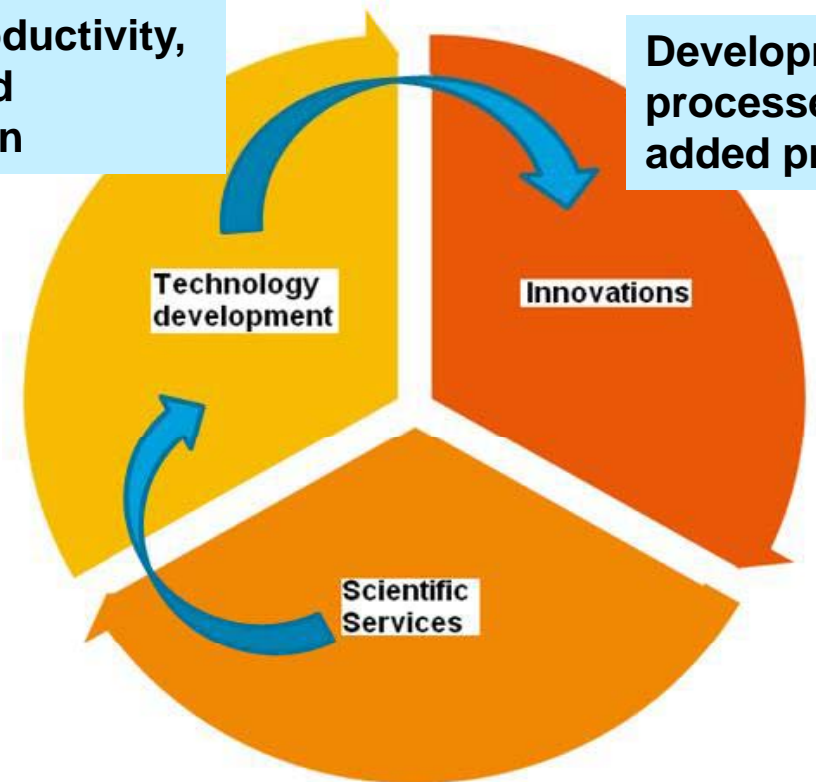


R&D @ JSW – Focus areas



Quality, Productivity,
Cost & Yield
Optimization

Development
processes and
added products



Support production departments to
meet the customer requirements



Research developments at JSW R&D

Process Developments

#	Title of research work	Status
1	Permanent and Tamper Resistant logo printing process for Cold Rolled Sheets	Patent filed
2	Process for Continuous De-Siliconization and De-Sulphurization of Hot Metal	Patent filed
3	Process for Treating High Mn (> 0.5 %) Hot Metal in LD Converter	Patent filed
4	Process For Producing Cold Bonded Pellets From process Solid Wastes	Patent filed
5	Process for accelerated aging of steel slag for use in road construction	Patent filed



Research developments at JSW R&D

Process Developments

#	Title of research work	Status
6	Process for micro-pelletization of process wastes	Patent filed
7	Process for iron recovery from dust, slimes and sludge	Patent filed
8	Process for beneficiation of BHQ and BHJ ores	Patent filed
9	Process for mill scale briquetting	Patent filed
10	Process for slag treatment for replacement as river sand	Patent filed
11	Process for geo-polymer concrete and mortar using BF and Steel slag	Patent filed



Research developments at JSW R&D

Design/ System Developments

#	Title of research work	Stat
1	New Slag pot resistant to Localized Thermal Stresses and for effective separation of metal from slag	Patent fil
2	Dynamic Duel stage Separator (DSDS) for efficient gravity separation of minerals	Patent fil
3	Improved Injenction Lance for De-Sulphurisation of Hot Metal	Patent fil
4	Material Conveyor Belt Rupture or Spillage Detection System	Patent fil
5	Multi Function Lance Burner Flame Sensing System	Patent fil
6	Oven Identification System for Alignment and Positioning of Guide and Pusher Car in coke ovens	Patent fil



Research developments at JSW R&D

Design / System Development

#	Title of research work	Status
7	Model based Control System for Fuel Rate and Energy optimization in Reheating Furnace.	Patent filed
8	System For Effluent Treatment at Coke Oven s.	Patent filed
9	Simulator System for Desulphurization of Coke Oven Gas	Patent filed
10	Dust Burner System for Injecting Recycled-Dust in to Corex furnace Melter Gasifier.	Patent filed



Research developments at JSW R&D

Product Development

#	Title of research work	Status
1	Seismic Resistant Reinforcement Steel	Patent fi
2	Interstitial Free (IF) Steel for Outer Skin Panel of Automobile Body	Patent fi
3	Low Carbon Bake-Hardening Steel through Batch Annealing Route	Patent fi
4	High Strength Interstitial Free Steel Having Excellent Formability through Batch Annealing Route	Patent fi
5	Low Carbon Extra Deep Drawing (EDD) Cold Rolled Steel	Patent fi
6	Hot Rolled High Strength Corrosion Resistant Structural Steel	Patent fi



Research developments at JSW R&D

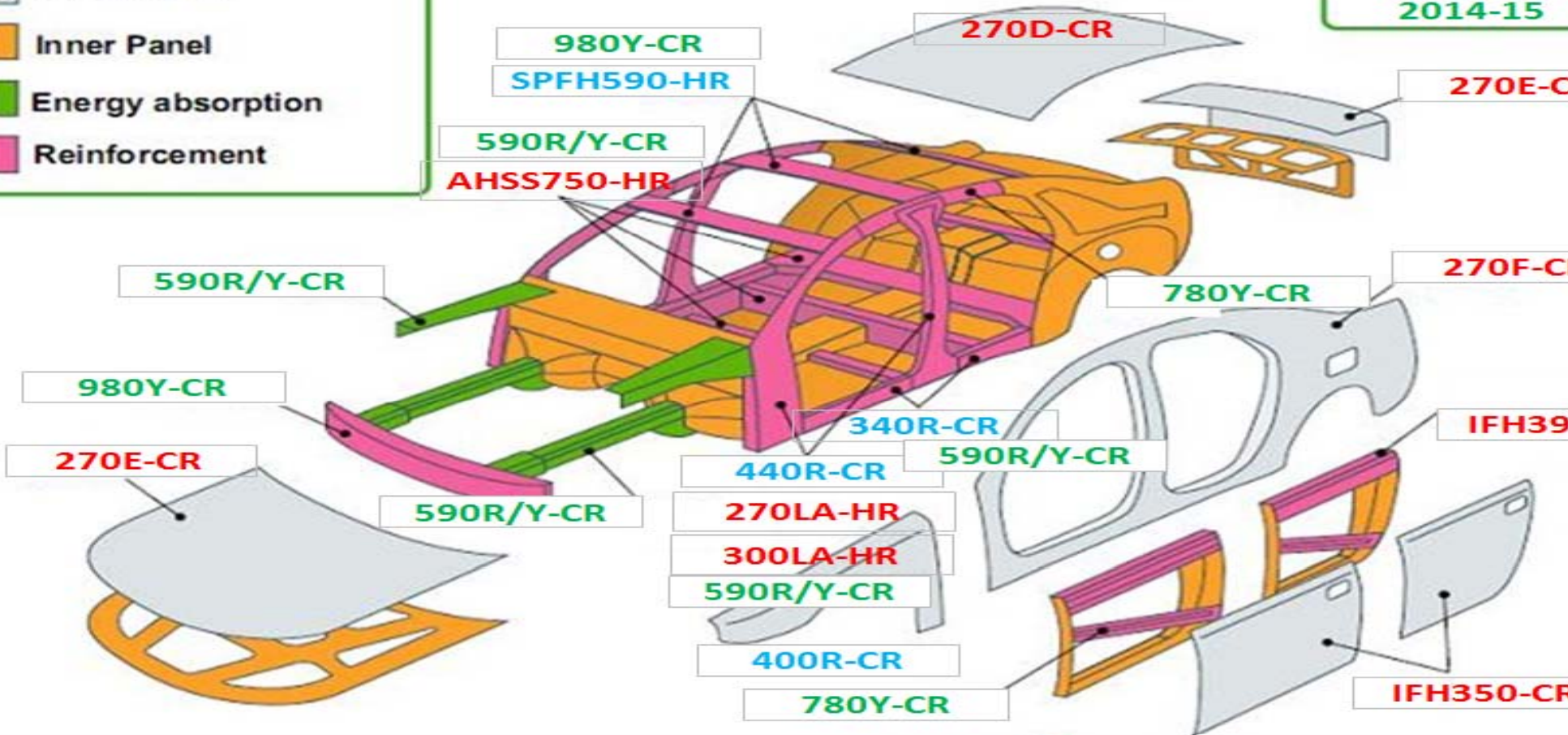
Product Development

#	Title of research work	Status
7	Hot Rolled Low Carbon Steel with High Cold Reducibility	Patent fil
8	Wire Rod Steel With Improved Draw ability for Thin Electrodes	Patent fil
9	Hot Rolled Medium Carbon Steel with Improved Harden ability	Patent fil
10	Hot Rolled Low carbon Steel Sheets for Direct Drawing Application	Patent fil

Auto Products Development Status

- Outer Panel
- Inner Panel
- Energy absorption
- Reinforcement

2012-13
2013-14
2014-15



Continuous expansion of product portfolio with focus on high-end auto-grade products

Innovations / Breakthrough Research

#	Project Title	Targeted deliverable
1	Clinker production through Dry slag granulation of BF slag and energy recovery	<ul style="list-style-type: none"> ▪ Indigenous technology development ▪ Reduction in water consumption ▪ Reduction in specific energy consumption ▪ Conservation of natural resources
2	Maximization of iron recovery through reduction roasting of iron ore fines using fluidized bed reactor	<ul style="list-style-type: none"> • New process development for dry beneficiation of iron ore. • Maximization of iron from iron ore fines
3	Development of alternate iron making technology using iron ore fines and thermal grade coal.	<ul style="list-style-type: none"> ▪ Indigenous technology development ▪ Flexibility of using medium and low grade ore fines and thermal grade coal ▪ Dry beneficiation of raw material ▪ Reduction in specific energy consumption, reduction in CO2 emission and low slag rate/THM

Innovations/Breakthrough Research

#	Project Title	Targeted deliverable
4	CO ₂ capture and production of value added products	<ul style="list-style-type: none">▪ Reduction in CO₂ emissions▪ New product development
5	Development of reagents for alumina removal from slimes	<ul style="list-style-type: none">• Reduction of alumina
6	Development of technology for inducing coking properties in non coking grade coals by catalyst	<ul style="list-style-type: none">• Replacement of pet coke and use of low cost non-coking coals in coke making



Thank you