



Decarbonisation of Cement Sector

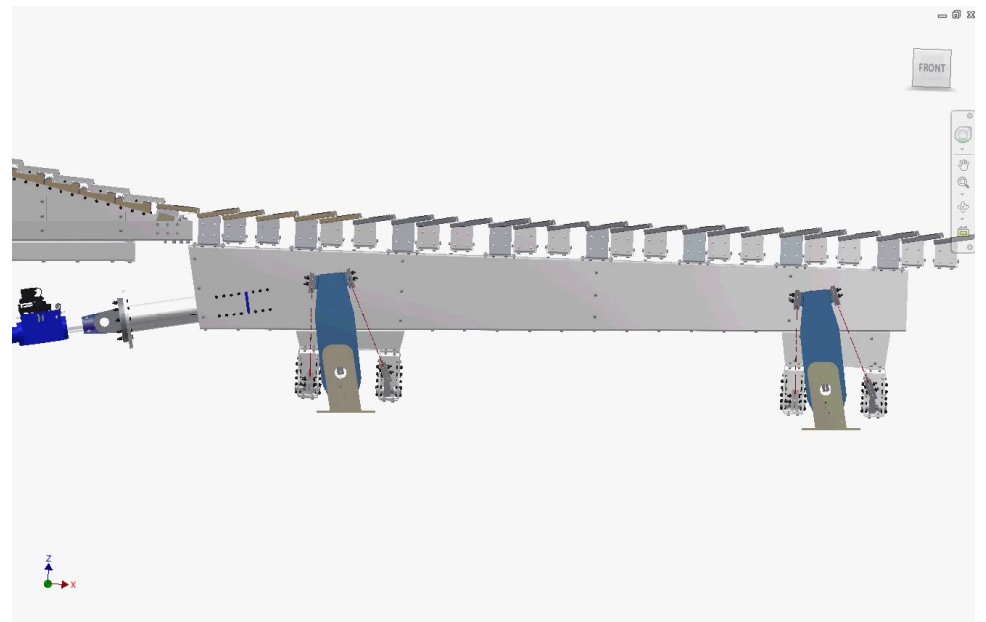
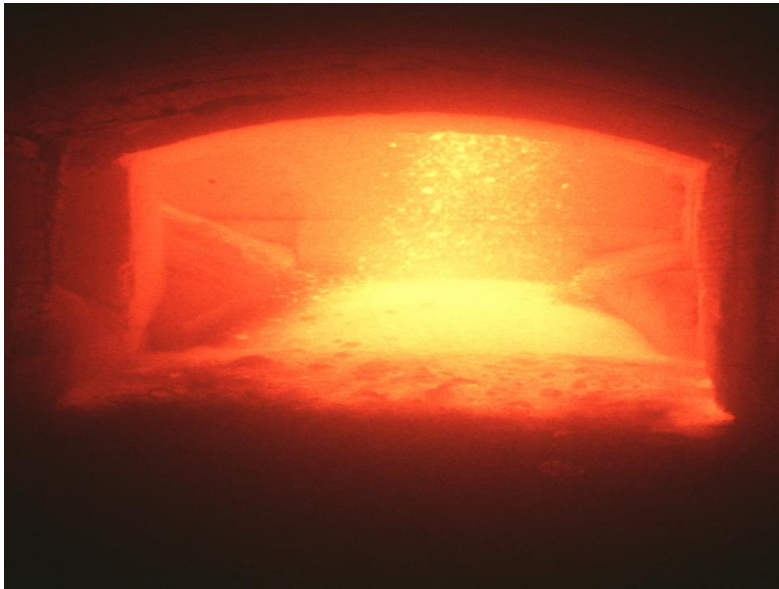


Udaipur
14.03.2022

Madhusudan R
Country Head (IKN India)

- 🥵 Reduce the Power Consumption
- 🥵 Reduction of cooler losses
- 🥵 Increase the WHRS power
- 🥵 Reduce the consumption of metallic parts
- 🥵 Sustain the energy levels for longer periods of time

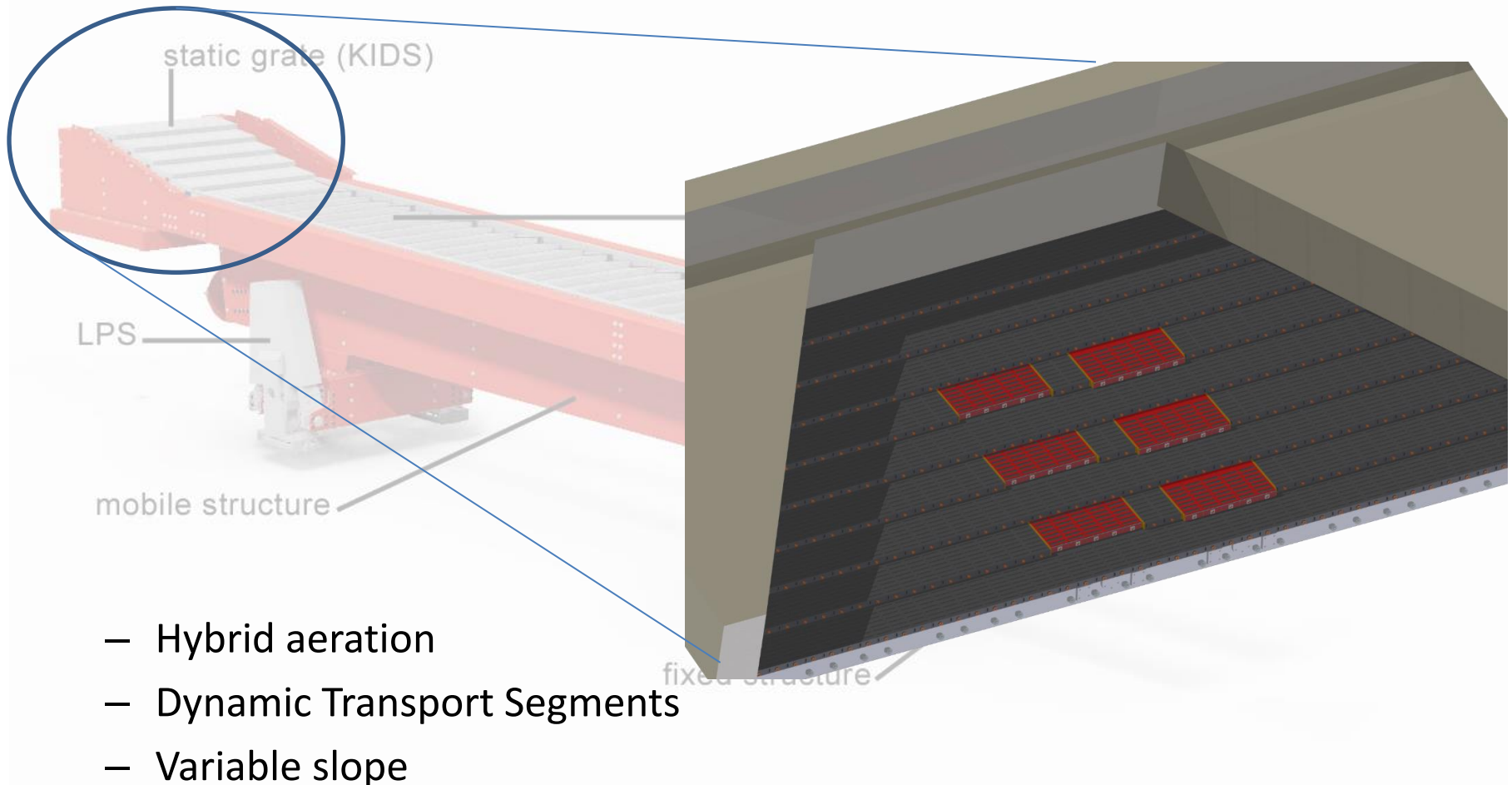
Type of energy	Description	Existing operating conditions in Industry	IKN Bench Marks
Electrical	Cooler fans , hydraulic drive & its auxiliaries and clinker crusher without HAR	4.5 to 7 kWh/t	3 kWh/t (lowest in India) 4.2 kWh/t (highest in India)
Thermal	Standard heat loss (Clinker+Vent+Radiation) Without water spray @ Recuperation air of 1.15 kg/kg cl	Cooler losses 100 to 120 Kcal/kg	85 kcal/kg (lowest) 85 to 90 kcal/kg (range)
Natural resource (Water)	Water spray at cooler vent	24 hours running	4 to 5 hours during upset
WHRS	Increase in WHRS Generation due to HAR	Equal more than IKN upto 0.7 MW	Upto 0.5 MW for 1.5 MTPA



- KIDS 4.0®
- Coanda Effect
- LPS® – wearless grate suspension with the highest precision
- A simple drive

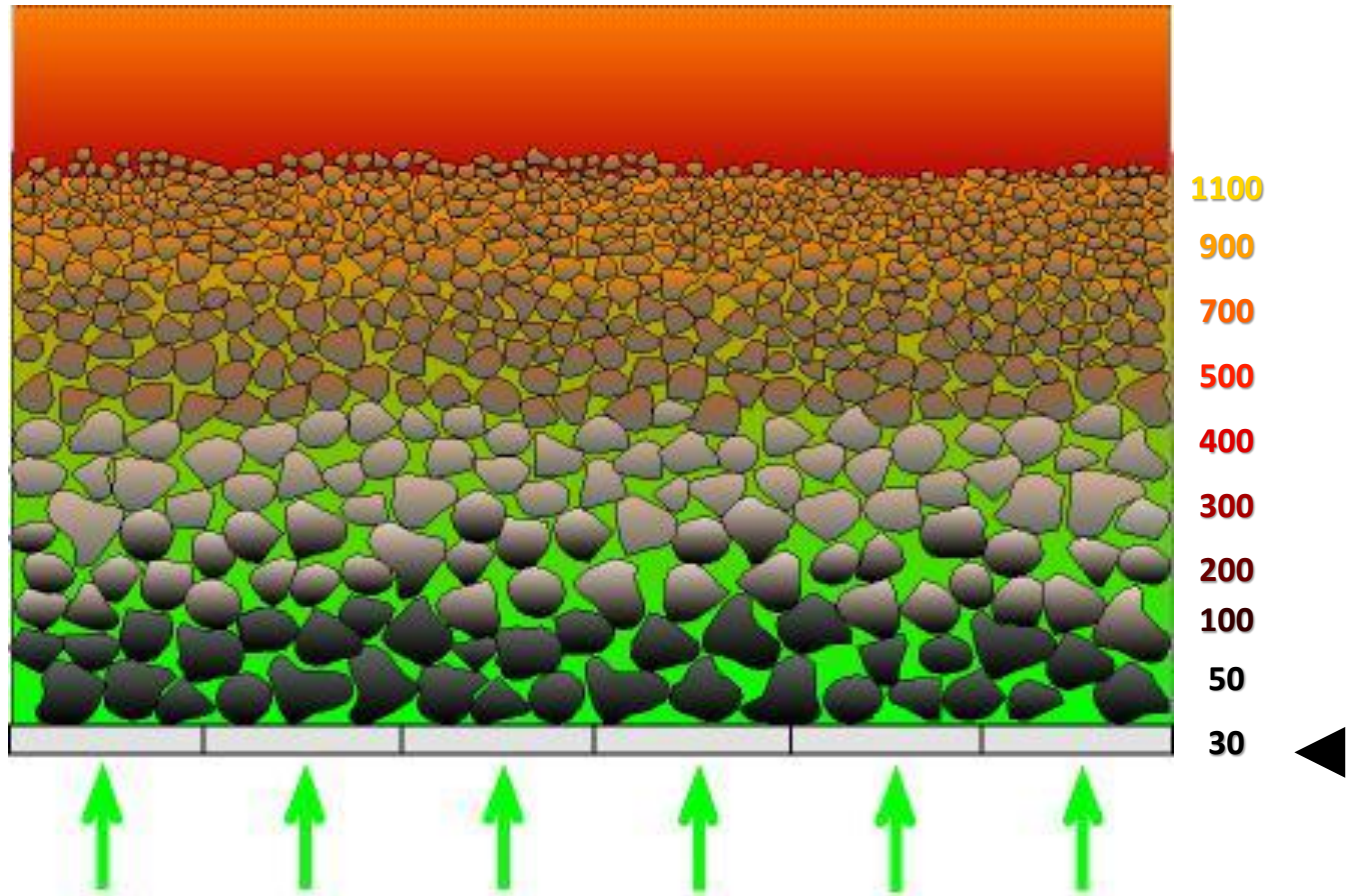
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KIDS 4.0

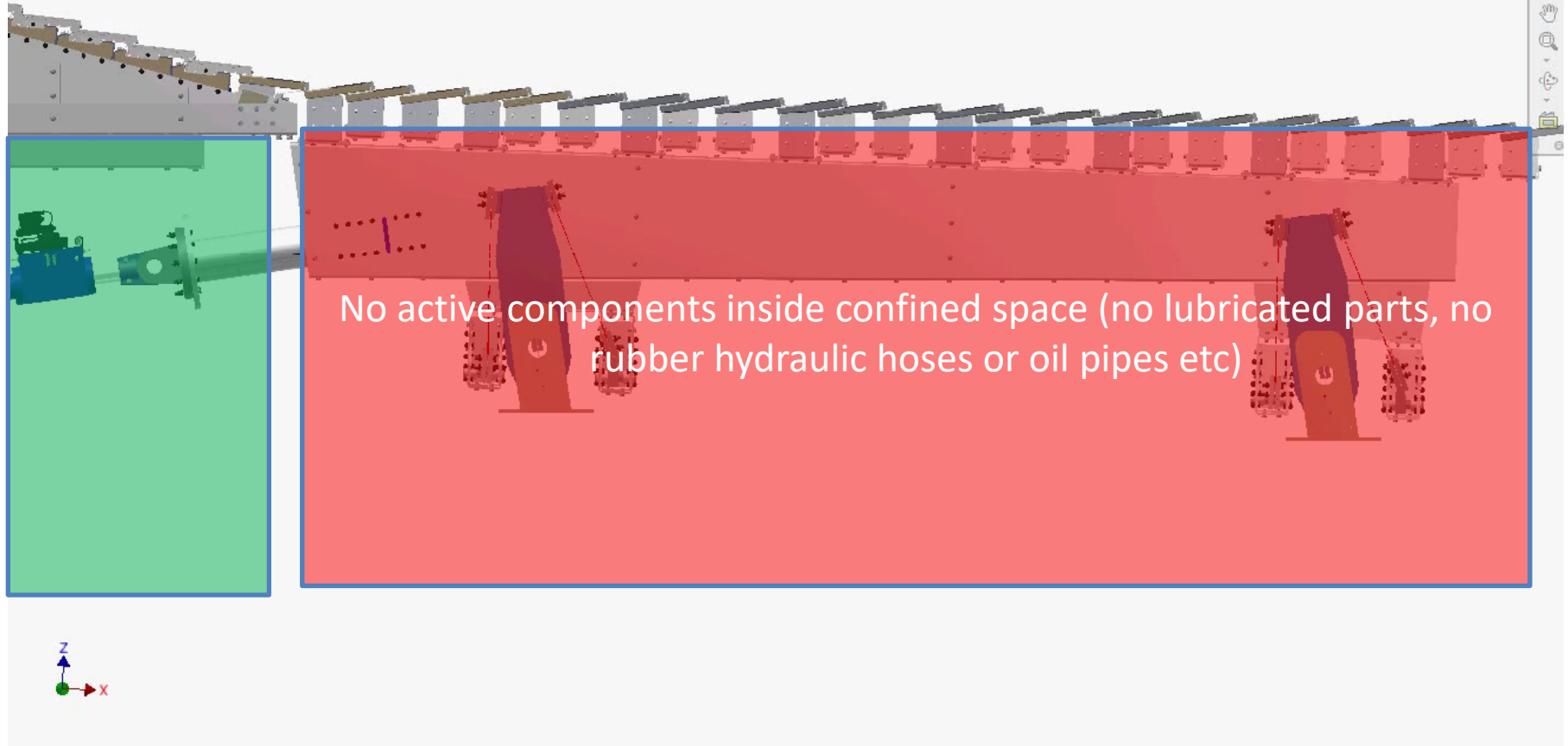


- Hybrid aeration
- Dynamic Transport Segments
- Variable slope
- Based on proven concept

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Simple but POWERFULL



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Case Study:
Dalmiapuram, IKN Cooler

Parameters	Baseline with 2 nd Gen cooler	PG Test after IKN Pendulum Cooler	Savings	Carbon equivalent
Cooler losses [kcal/kg]	176 @ 0.75	135 @ 0.72	41 kcal/kg	6040 tons
Power [kWh/t]	4.05	3.85	0.2 kWh/t	614 tons
Replacement of metallic parts [Tons of steel]	10 T/year	<1 t/year	9 T/year	7 ton
Additional power Generation through HAR			0.45 MW	771 tons

Total Carbon equivalent is 7016 Tons per year

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NGCBM - New Delhi - December 2022

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Case Studies: Sustainable results
Lafarge Aresmeta >20 years

Parameters	Baseline at 2001 (before IKN)	Latest results 2019 (After IKN)	Savings	Carbon equivalent
Cooler losses Normalised [kcal/kg]	123 @ 0.89	86 @ 0.89	37 kcal/kg	6040 tons
Power [kWh/t]	4.6	3.1	1.5 kWh/t	614 tons
Maintenance [Tons of steel]	10 T/year	<1 t/year	9 T/year	7 ton

20 YEARS OF SUSTAINED RESULTS

Total Carbon equivalent is 6661 Tons per year.

For 20 years, 6661*20=133,220 tons.

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With 122 MTPA clinker in India being cooled by IKN,
the savings are 23.5 MW of power, and 10500 wagons of Coal.

This contributes to the reduction of
375,835 T Carbon/per annum.

**Let us make a
greener tomorrow
and save for
Future
Generations!**



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Innovation and sustainability define the Leader



IKN

ENGINEERING THE FUTURE

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... cool down

Thanks for your attention!

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