ALGOMA STEEL INC.

Community Liaison Committee Meeting #40

Tuesday, March 8, 2022

Agenda

1. Review of December 14th, 2021 meeting notes
2. Membership Items
3. Electric Arc Steelmaking
4. Environmental Permit Applications
5. Cokemaking Emissions Performance
6. Public Complaints
7. Next Meetings

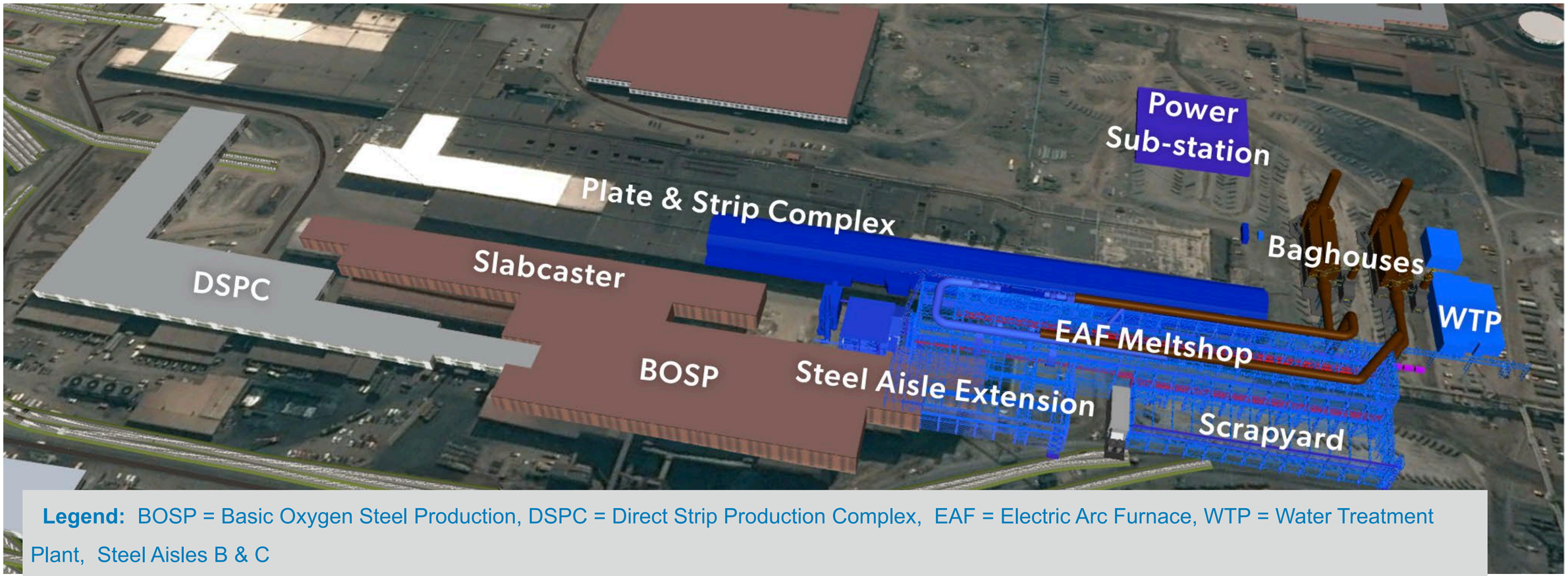
Membership

Current Members and Alternates

Representation	Primary Member	Alternate
Algoma Steel	Fred Post	Chris Galizia
Ministry of Environment, Conservation & Parks	Lori Greco	Ron Dorscht
Public	David Trowbridge	Peter McLarty
Public	Jillian Marquis	
SSM Tribe of Chippewa Indians	Kathie Brosemer	
Algoma Public Health	Melissa Francella	Chris Spooney
Chippewa County Health Dept.	Steve Carey	Suzanne Lieurance
Batchewana First Nations	Dan Sayers Jr.	
City of Sault Ste. Marie	Catherine Taddo	Maggie McAuley
United Steel Workers Local 2251	Wayne Hubbard	Dennis Gagne
St. Mary’s River RAP Coordinator	Lisa Derickx	

Algoma Invests $700M in Transition to Electric Arc Steelmaking

In November, 2021 Algoma Steel Inc. announced its decision to invest CDN $700 million in the transition to electric arc steelmaking. Two state-of-the-art electric arc furnaces will replace its existing basic oxygen steelmaking operations and result in the elimination of cokemaking.



Legend: BOSP = Basic Oxygen Steel Production, DSPC = Direct Strip Production Complex, EAF = Electric Arc Furnace, WTP = Water Treatment Plant, Steel Aisles B & C

Anticipated Benefits of Electric Arc Steelmaking

Improved Competitiveness

- Creates cost competitive platform for growth and value-add downstream opportunities by increasing our annual liquid steel production capacity from 2.8 to 3.7 million tons.
- Reduces sustaining capital requirements allowing more opportunity for investment.
- Offers scalable operating model and cost structure.
- Reduces exposure to carbon taxes
- Eliminates the risk associated with a single furnace operation.

Builds our Organization and Community

- Delivers a modernized workplace with skills development and succession opportunities.
- Creates at least 500 new construction jobs in the region.
- Provides more apprenticeships, co-op placements, and high-skill career opportunities.

Shrinks our Environmental Footprint

- Reduces our greenhouse gas emissions by up to 70%
- Eliminates emissions associated with coke-making

Makes us a financially sustainable producer and employer for generations to come.

When paired with Ontario's low-carbon power grid, it would make Algoma Steel the leading producer of green steel in Canada, and among the top suppliers in North America.

Proposed Operational Transition to Electric Arc Steelmaking

Production Method

NOV 2021-2024	APR-2024	2025	2026	2029 LONG-TERM
CONSTRUCTION PERIOD Coke Ovens 7,8,9 Blast Furnace 7 Oxygen Steelmaking	COMMISSION RAMP Coke Ovens 7,8,9 Blast Furnace 7 Oxygen Steelmaking EAF 1 | EAF 2	PRODUCT CERTIFICATION Coke Ovens 8, 9 Blast Furnace 7 EAF 1 | EAF 2 *(Alternating Mode)*	ALTERNATING HYBRID MODE ("EAF PHASE I") Coke Ovens 8,9 Blast Furnace 7 EAF 1 | EAF 2 *(Alternating Mode with 30% hot metal from BF)*	**INDEPENDENT MODE** ("EAF PHASE II") EAF 1 | EAF 2 (With full power upgrades; no LSP power required) 100% Cold Charge Scrap *(option for alternate iron units)*

Phase I

Operations would alternate arcing on one furnace at a time with approximate 30% hot metal charge from No. 7 Blast Furnace (which is operating at reduced output). Powered by the on-site LSP power generation and excess grid power from the local 230kV transmission upgrade.

Phase II

Operate both electric arc furnaces simultaneously with 100% cold charge, including obsolete and prime scrap with option for addition of alternate iron units, such as HBI or pig iron as required. Fully powered by the Ontario grid. On-site power generation not required.

Note: 2025 onwards, No. 7 Blast Furnace will operate at a lower rate.

Algoma's Shrinking Environmental Footprint

Transition to Electric Arc Steelmaking

Algoma Steel has committed to transition its manufacturing process from the integrated basic oxygen steelmaking route to electric arc steelmaking. This process change will shrink Algoma's environmental footprint dramatically, **reducing greenhouse gas emissions by up to 70%**(1) and positioning Algoma as one of the leading producers of green steel in North America.

Other benefits include:

Quieter
Fewer noise sources.

Less Waste
Fewer by-product streams.

Cleaner Water
Fewer effluent discharges.

Cleaner Air
Lower emissions from fewer sources.

		Preliminary Estimated Reduction(1).	% Reduction
GHG Emissions	**CO_2** **CO_2 /NT production**	3.0 MM tonnes 1.33 tonnes	70% 75%
SOx Emissions		4,060 tonnes	82%
NOx Emissions		1,604 tonnes	52%
Cokemaking Emissions		Complete elimination of Cokemaking Stack and Fugitive Emissions	100%

Note (1): Source: Company information. Expected environmental benefits from the EAF are based on projected estimates for Algoma, using published data sources for similar technologies. Estimated benefits based on current production versus forecasted production of 3.0MM tons of steel shipments produced under full, exclusive EAF configuration.

Transition to Electric Arc Furnace Steelmaking

Applications for Environmental Compliance Approvals

Algoma Steel will be applying for the following approvals:

1

Site wide **Environmental Compliance Approval** for air and noise based on the planned progressive shutdown of equipment and facilities associated with the transition to electric arc furnace steelmaking. Application to include:

- Two new EAF exhaust treatment plants including baghouses
- A new cooling tower

2

Amendment to the existing industrial sewage works **Environmental Compliance Approval** that incorporates:

- New recirculating non-contact cooling water system (with a small blowdown to the existing water treatment facility)
- No new contaminant loading to the existing treatment facility

Over the course of the transition, contaminant loading to the water treatment facility will decrease.
Up to five existing effluent discharges and up to 7 existing noise sources will be eliminated.

Pending Site Specific Standard Requests

New Site-Specific Standards will govern the operating transition to electric arc steelmaking

- By the end of March 2022, Algoma will be submitting a request for amended site-specific standards for benzene, benzo(a)pyrene, and particulate matter. The new standards will reflect changes to the air emission dispersion model that have resulted in an increase in modeled emissions.
- Model updates include:
  - Newest model version (province-wide)
  - Data reflecting more recent meteorological conditions
  - Changes to the land use designation from urban to rural to more accurately reflect local land use
- Algoma's request will include a continuous improvement plan that provides for the substantial reduction or elimination of emissions as a result of the progressive shutdown of equipment and facilities in the transition to electric arc steelmaking.
- Site-Specific Standards (SSS) are government approved standards issued to facilities that are implementing a continuous improvement plan towards reducing the emissions of specific contaminants.
  - Site Specific Standards provide a compliance approach for existing facilities when new limits are imposed in regulations that they are unable to meet with their existing technology.
  - The SSS's set out a plan for these facilities that progressively moves them towards meeting the new limits.

New Site Specific Standard Request

Sulphur Dioxide (SO_2)

A new provincial standard for SO_2 comes into force in July 2023.

- Existing integrated steelmaking facilities in Ontario cannot achieve this new standard.
- Both the federal and provincial governments have announced they will require Coke Oven Gas Desulfurization by January 1, 2026 as a means to reduce SO_2 emissions from integrated iron and steel making facilities.
- Algoma will be taking an alternative approach to reduce SO_2 through its transition to electric arc steelmaking, which will see the elimination of cokemaking from Algoma's operations. Therefore, Algoma will be applying for a Site-Specific Standard that includes an action plan to reduce SO_2 that reflects the progressive facility shutdown.
- In the interim and throughout the transition, Algoma will continue to operate its facilities in compliance with the requirements of all Environmental Compliance Approvals and Site-Specific Standards.

Progressive Reduction in Modeled Emissions

Transition to Full Compliance to the Standard

Contaminant	Averaging Period	MECP Point of Impingement Limit (µg/m³)	Maximum Predicted POI Concentration (µg/m³)			
			Current-2024	2024/2025	2026-2028	2029 Onwards
Benzene	Annual	0.45 (2.2 SSS)	3.99	3.99	3.21	0.11
Benzo(a)pyrene	Annual	0.00001 (0.004 SSS)	0.0053	0.0053	0.0045	0
Sulphur dioxide	1 hour	690 (current) 100 (as of Jul,2023)	597	525	432	70
Sulphur dioxide	Annual	No current limit 10 (as of Jul, 2023)	34	23	18	3
Particulate matter	24 hour	120 (127 SSS)	135	132	121	36

- Algoma Steel is applying for updated Site Specific Standards for benzene, B(a)P and particulate matter and a new Site Specific Standard for sulphur dioxide. These would apply to the interim period, allowing for the planned progressive shutdown of equipment and facilities associated with the transition to electric arc steelmaking.
- The transition to electric arc steelmaking will eliminate coke-making emissions.
- We expect the facility will meet Ontario Regulation 419 Schedule 3 criteria when it reaches EAF independent mode. At that time, Site Specific Standards will no longer be required.

Progressive Transition to Electric Arc Steelmaking

Operating equipment included in the modeled transition to electric arc steelmaking.

Current - 2024	2024/2025	2026-2028	2029
Coke Oven Batteries #7,8,9 Blast Furnace #7 Oxygen Steelmaking	Coke Oven Batteries #7,8,9 Blast Furnace #7 Oxygen Steelmaking EAF 1 | EAF 2 *- alternating*	Coke Oven Batteries #8, 9 Blast Furnace #7 EAF 1 | EAF 2 *- alternating*	**EAF1 and EAF2** - 100% Cold Charge Scrap - (option for alternate iron units)
	Oxygen Steelmaking shut down #7 Blast Furnace operating at reduced rate	Coke Battery #7 shut down #7 Blast Furnace operating at reduced rate	Coke Oven Batteries #8 & 9 shutdown #7 Blast Furnace shutdown

Terminology:

MECP
Ministry of Environment, Conservation and Parks

POI
Point of Impingement: any point outside the Company's property boundaries at which the highest concentration is expected to occur

µg/m3
The concentration of an air pollutant is given in micrograms (one-millionth of a gram) per cubic meter of air

Air Emission Dispersion Modeling
computes the maximum concentrations of contaminants emitted from a facility assuming all equipment is operating at full capacity. Factors that impact the transport of contaminants in the atmosphere such as meteorological conditions, site configuration, emission release characteristics and surrounding terrain are incorporated into the computer modeling.

Technology Benchmarking Report

Site-Specific Standard Application

What is it?

- Assessment of feasible pollution control options to reduce emissions, benchmarking against approaches used at other facilities across the globe.
- Electric arc steelmaking and other pollution control options were considered

Examples of Air Pollution Control Options and Best Practices

Best Practice (Green highlights = already installed)	Benzene	Benzo(a)pyrene	Particulate Matter	Sulphur Dioxide
Electric arc steelmaking	✓	✓	✓	✓
Gas desulphurization				✓
Individual Oven Pressure Control technology	✓	✓	✓	
Leak detection and repair program	✓	✓	✓	✓
Emissions collection and treatment system *(e.g., scrubber)*	✓	✓		✓
Dust collection system			✓	
Water/dust suppressant during material transfer, on roadways and stockpiles			✓	

ALREADY INSTALLED

What are the outcomes of the report?

- Dispersion modelling demonstrates compliance is best met for all contaminants using electric arc steelmaking
- Other identified best management practices are planned for implementation including enhanced dust suppression
- Some pollution control options were ruled out due to lack of technical or economic feasibility

Cokemaking Emissions Performance
100% Compliant with the Site Specific Standard leak limits

Key Performance Indicators related to Cokemaking Emissions:

- average intensity of pushing emissions
- average duration of charging emissions
- % lid leaks
- % off-takes leaks
- % door leaks

Performance is monitored and calculated daily for each battery

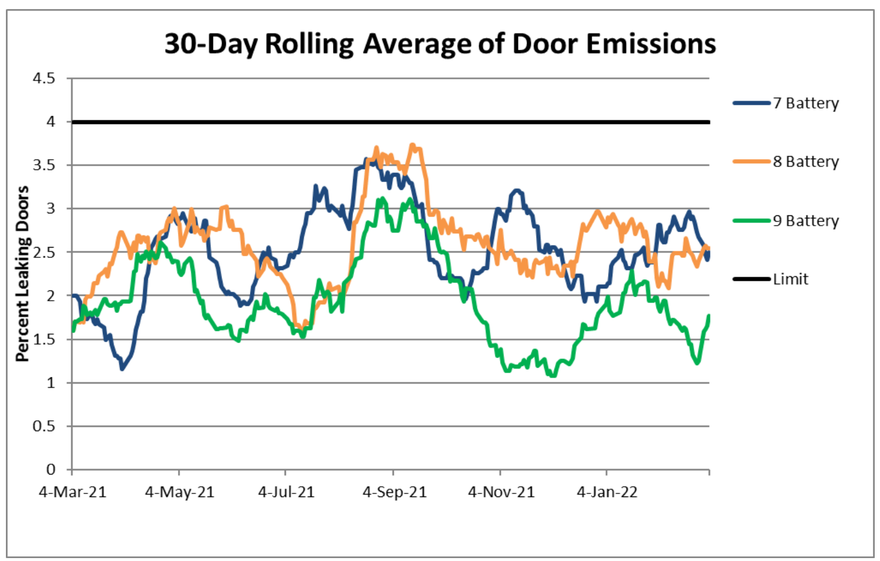
Progressive Annual Reduction

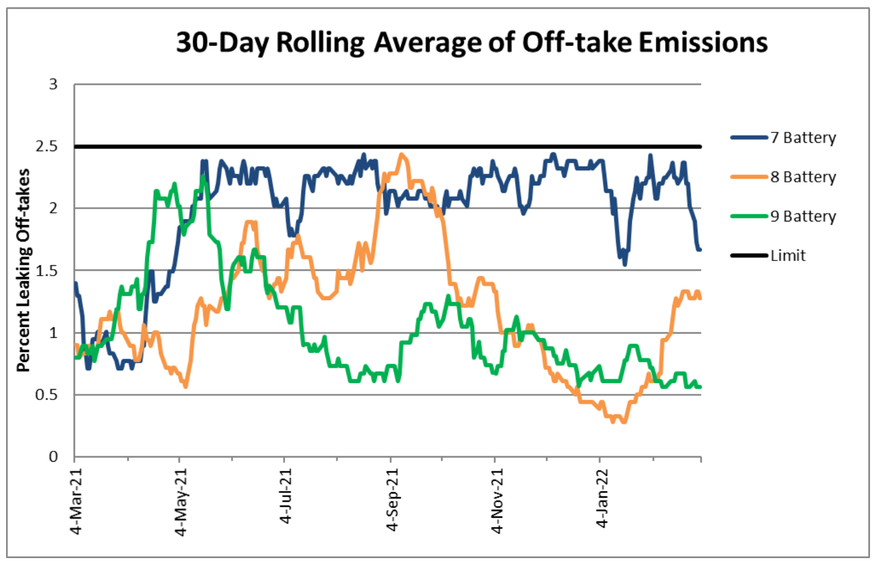
Implementation Date	30 day rolling average% Doors	Lids	Off-takes	Charging Emission	Pushing Opacity (%)
July 2, 2015	38	0.8	25	12 sec	50
Jan 1, 2016	22.5	0.8	15	12 sec	50
Jan 1, 2017	7	0.8	4.2	12 sec	50
Jan 1, 2019	7	0.8	4.2	12 sec	40
Jan 1, 2020 onward	4	0.4	2.5	12 sec	30

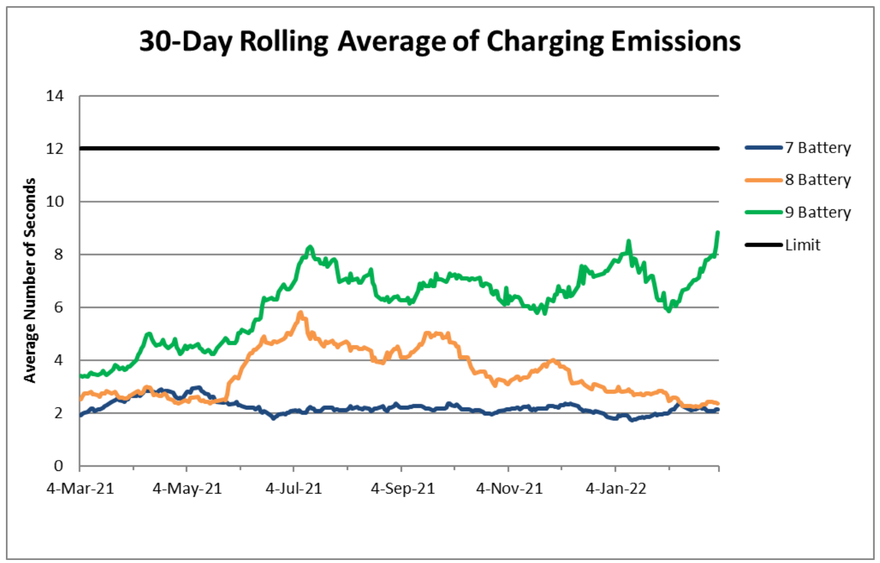
Algoma Steel is meeting the current leak limits on all three batteries.

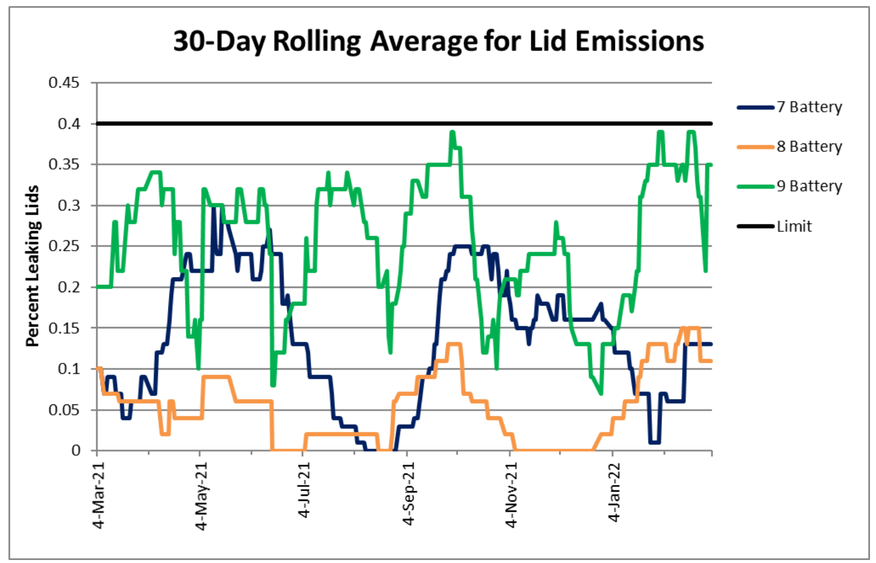
Improved Air Quality

Cokemaking Emissions Performance





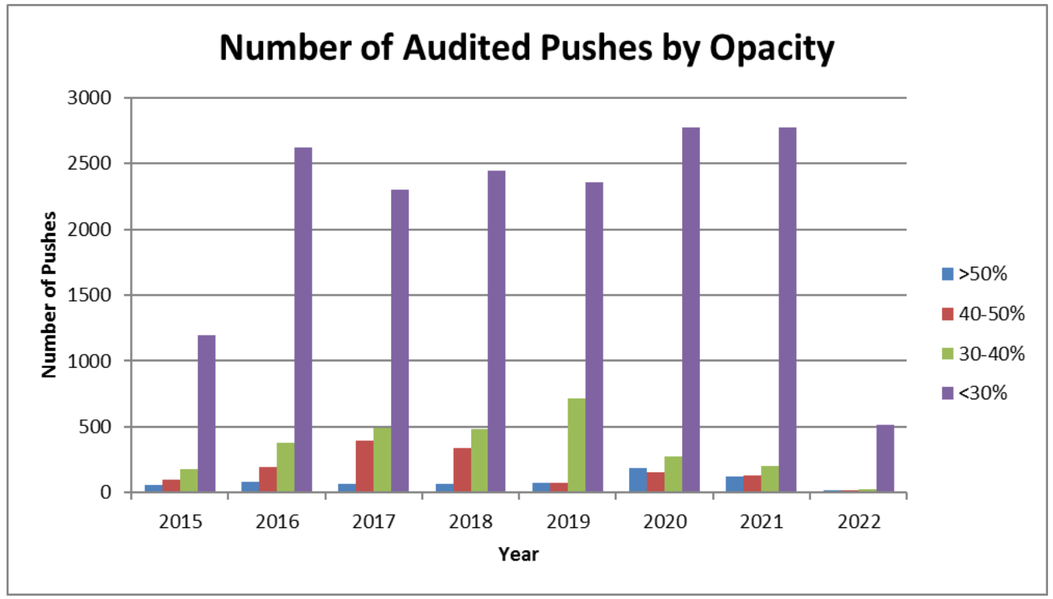


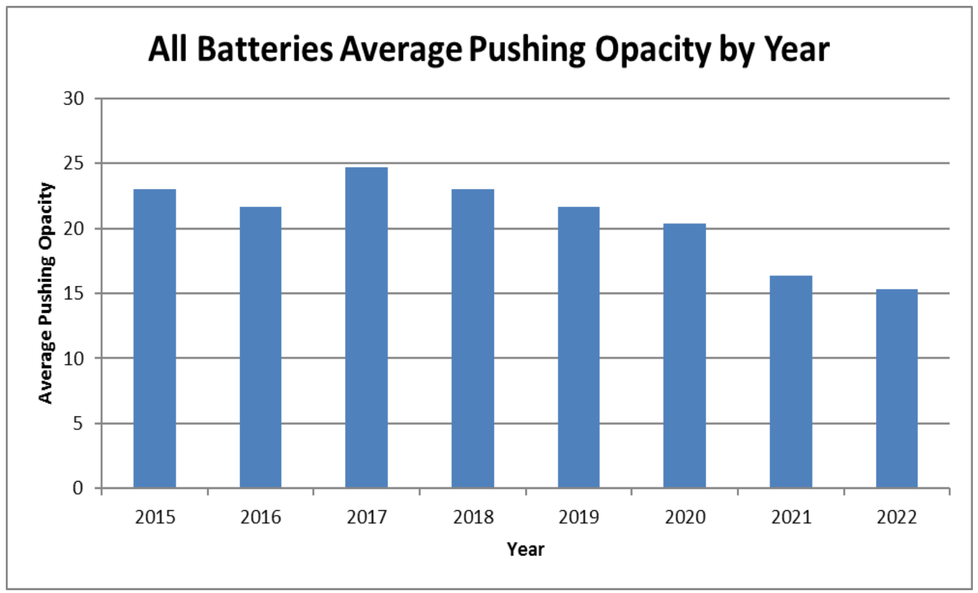


All batteries performing below current leak limits.

Improved Air Quality

Cokemaking Emissions Performance





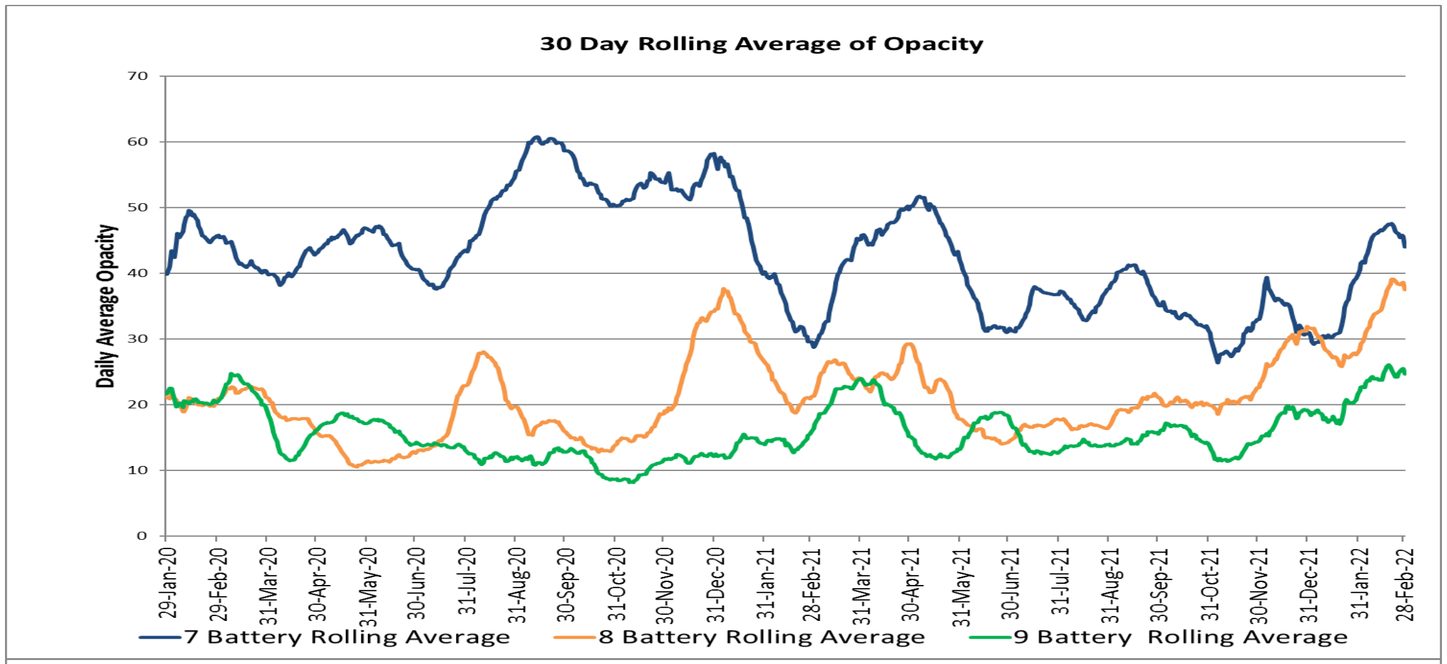
Notes:

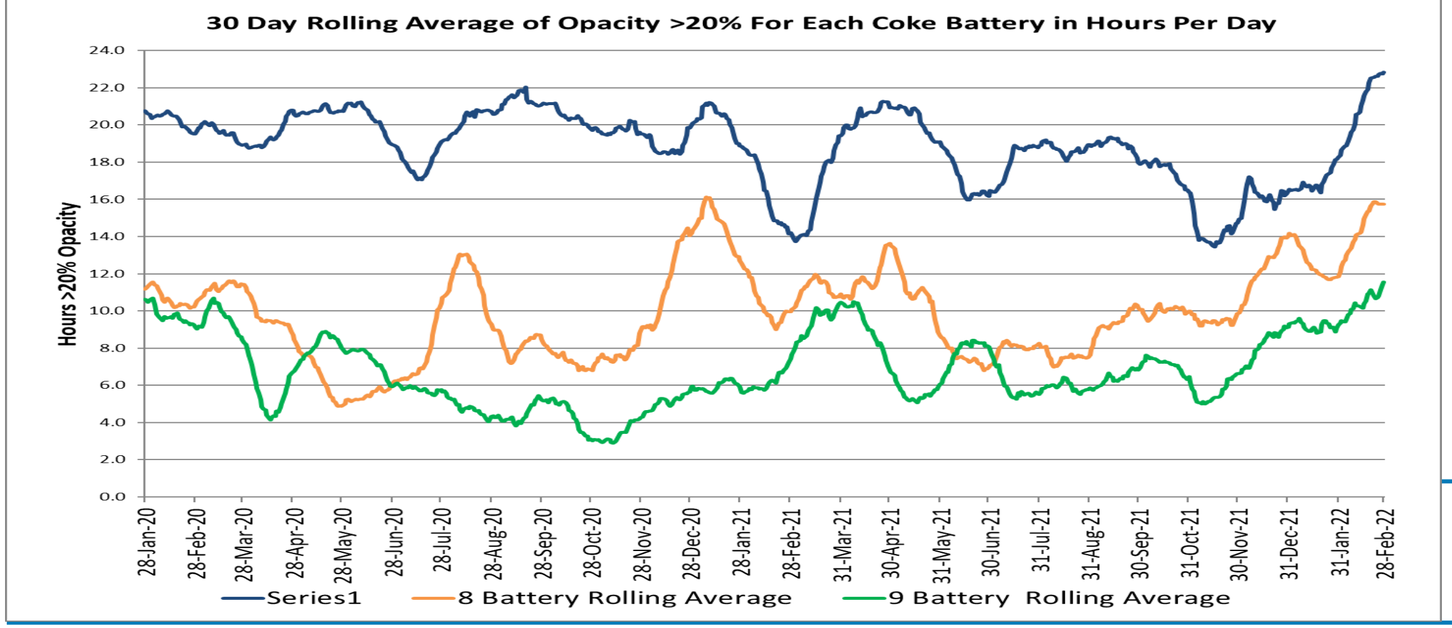
- 2015 data begins on July 2nd when the standard came into force
- 2022 data includes Jan 1, 2022 to Mar 3, 2022
- Number of audits per year vary based on changing operating conditions

To date all corrective actions have successfully corrected pushing opacity.

Progress Improvement

Cokemaking Stack Opacity





- A renewed action plan has been developed and implemented to address these trends, improve opacity, prevent recurrence and demonstrate continuous improvement

Public Complaints

The following public complaints were received by the Company since the last CLC:

- 1 Odour & 2 Particulate

An internal investigation into each public complaint is conducted and a report is submitted to the MECP and a summary is listed on the company website.

Community Liaison Committee - Next Meetings

Proposed 2022 Schedule:

- June 7th, 2022
- TBD