

# Live Panel: GET ONBOARD: HOW RAIL IS LEADING THE CHARGE ON CLIMATE AND INFRASTRUCTURE

May 13, 2021 Webinar



**Moderator:**  
**Anne Canby**  
OneRail Coalition



**Andrew Wishnia**



U.S. Department of Transportation



**Alanna Strohecker**

**AECOM**



**Paul E. Denton**  
**Progress Rail**  
*A Caterpillar Company*



**Noah Heulitt**  
**ALSTOM**  
*• mobility by nature •*

# **PROGRESS RAIL**

COMMITTED TO BUILDING A BETTER WORLD

**Progress Rail**  
*A Caterpillar Company*

**WE KEEP YOU ROLLING**


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**20 YEARS**  
on the Dow Jones  
Sustainability Index  
(DJSI)



Fortune's World's Most  
Admired Companies  
**TOP 50**  
for 19th Consecutive Year

  
**Reduced  
Greenhouse Gas  
Emissions by  
20%**

 **35.5%**  
of electrical energy  
was obtained from  
**Renewable or  
Alternative Energy  
Sources**

 **27%**  
of sales from products, services  
and solutions demonstrated an  
**Improved  
Sustainability Benefit**  
over prior offerings

**~\$30M**   
**Invested in Global  
Communities by the  
Caterpillar Foundation**

**Progress Rail**  
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TBL East Marketing All Hands

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# PROGRESS RAIL SUSTAINABILITY LEADERSHIP



## CURRENT TECHNOLOGIES

- Tier 4 Diesel Locomotive
  - EGR and SCR Technologies
- Tier 4 Locomotive Repowers
- Lithium-Ion Battery Locomotives (Joule)
- TALOS® Train Automation
  - Machine Learning applied to AI controllers
  - Energy Recovery & Fuel Savings
- Energy Optimization
  - Zero Idle Solution (LiON)
  - Inverter Driven Cooling Fans
- PR Uptime™ Suite (Fuel Monitoring)
- Biofuels + Renewable Diesel
- Network Optimization (Movement Planner)



## IMMINENT TECHNOLOGIES

- Additional Battery Electric Locomotive Product Developments
- LNG/CNG + Diesel
  - 100% LNG Substitution
- Aerodynamics
- Advanced Energy Recovery
- Continued Efficiency Improvements
- Additional Alternative and Renewable Fuels



## EMERGING TECHNOLOGIES

- Hydrogen Engine
- Hydrogen Fuel Cells
- Aluminum Air Battery
- Solid State Battery Technology



# Intersection of Rail Infrastructure + Innovative Climate Solutions

**Alanna P. Strohecker, P.E**  
AECOM | Global Goods Movement Director

*Uplifting Communities...Growing Economies...Improving Quality of Life*



## AECOM's ESG Initiative

To embed sustainable  
development and resilience  
across our work for our clients

To achieve net-zero carbon  
emissions as a company

*Advancing Electrification, Building Resilient Infrastructure and Unlocking Innovation*

# Helping the Rail Industry Future Proof their Infrastructure by **Building Opportunities to Develop Additional Sustainable Actions**

**Alanna P. Strohecker, P.E**  
AECOM | Global Goods Movement Director



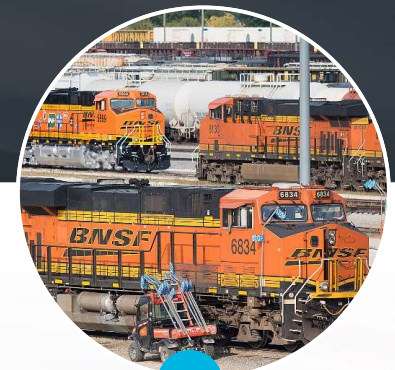
Valley Link  
Sustainability Policy



Brightline Florida



Northeast Corridor  
Support



BNSF Railway





# REMSA

## Get Onboard: How Rail is Leading the Charge on Climate and Infrastructure

Noah Heulitt

May 13, 2021

**ALSTOM**  
• mobility by nature •

# Leading the Way to Greener & Smarter Mobility, Worldwide

- We partner with our stakeholders to optimise transport networks by understanding what moves people, listening to their needs and aspirations.
- We strive to lead the way to smarter and more sustainable mobility, tech-driven innovation is in our DNA.
- We stay true to our core values as an agile, inclusive, and responsible company. We are proud to work together to reinvent mobility and make transport easier and more intuitive.



**Be the leading global innovative player for a sustainable & smart mobility**



# Alstom's Green Mobility Technology

iLint



- First Hydrogen Powered Train
- Over 200k km in revenue service

Coradia Stream FCMU



- Regional Hydrogen train being developed for Italian customer
- Greater passenger capacity than iLint

Coradia BEMU



- Battery Electric train in development for German customer
- Operates on battery between Catenary

Prima H3/H4



- Hybrid battery shunting locomotives for freight customers
- Exploring hydrogen applications to fully reduce emissions

Green Traction



- Partnering with customers to remove diesel and replace with battery or fuel cell technology
- Applicable to passenger and freight applications

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