ENVILINE™ Energy Management Solutions
Recovery and receptivity of the braking energy in DC rail transportation systems
ABB, the largest independent provider of DC wayside energy management solutions, offers a complete suite of products for more energy efficient rail transportation. Recycling, or managing, the surplus braking energy economically can reduce the overall power consumption by as much as 10 – 30 percent, yet without the need to invest in new cars or network control systems. With the ENVILINE product portfolio, ABB offers the right solution for each network environment. In addition to energy management solutions, the ENVILINE offering includes DC power supply and protection equipment.

**ENVILINE ERS**

**Energy Recuperation System with AC network connection**

The ERS is a wayside Energy Recuperation System that saves the surplus braking energy by returning it back to the AC network, thus reducing the total energy consumption of rail transportation system by 10 – 30 percent.

**Key benefits**

- Low energy costs through energy recuperation
- Improves quality of AC power network through harmonics and reactive power mitigation
- Lowest up-front and maintenance costs thanks to smallest footprint, easy installation and low maintenance
- Compatible with new and existing systems

**Braking energy management diagram**
ENVILINE EDS
Energy Dissipation System for assured receptivity
The EDS is the Energy Dissipation System. It ensures track receptivity during regenerative braking by dissipating all surplus energy that cannot be absorbed by other onboard loads/nearby trains, nor recovered by the ENVILINE ERS or ESS. By deploying the wayside EDS instead of onboard resistors, the rail operator reduces the train’s weight and energy consumption, and also eliminates accumulation of heat caused by braking in tunnels and underground stations.

Key benefits
- Highest reliability at low operational and maintenance costs
- No need for onboard dissipation unit
- No EMC or audible noise
- Easy deployment

ENVILINE ESS
Energy Storage System with local grid connections
The ESS is a wayside Energy Storage System. It stores and recovers the surplus braking energy, thus reducing the total energy consumption of rail transportation system by 10 – 30 percent. ESS can come with either super capacitors (for short term storage and recovery of the braking energy with an attractive payback) or with batteries for additional benefits and revenue generating services.

Key benefits
- Low energy costs through energy storage and recovery
- Quick payback thanks to high energy efficiency
- Improves traction power and manages peak power demand
- Easy deployment with no AC connection
- Compatible with existing train systems

Up to 30 percent energy savings

ABB | ENVILINE Energy Management Solutions
Contact us

ABB Inc.  
(formerly Envitech Energy)  
180 Brunswick Blvd.  
Pointe-Claire, Quebec, Canada  
H9R 5P9  
Phone: +1 514 426 4430  
Email: envitech@ca.abb.com  
www.envitech.com

ABB Sp z o.o.  
Power Control  
27, Placydowska Str.  
95-070, Aleksandrow Lodzki, Poland  
Phone: +48 42 24 00 100  
Fax: +48 42 29 93 340  
Email: enviline@pl.abb.com

ABB Switzerland Ltd  
Power Systems  
Bruggerstrasse 72,  
CH-5400 Baden Switzerland  
Phone: +41 58 586 22 11  
Fax: +41 58 586 23 05  
Email: info.abbsecheron@ch.abb.com

ABB Sécheron SA  
Rue des Sablières 4-6  
CH-1211 Genève Switzerland  
Phone: +41 58 586 22 11  
Fax: +41 58 586 23 05  
Email: info.abbsecheron@ch.abb.com

ABB Australia Pty Limited  
601 Blackburn Road  
Notting Hill VIC, Australia 3168  
Phone: +61 3 8544 0000  
Fax: +61 3 8544 0001  
Email: pes@au.abb.com

www.abb.com  
www.abb.com/railway  
www.envitech.com

We reserve the right to make technical changes or modify the contents of this document without prior notice.  
© Copyright 2013 ABB. All rights reserved.