



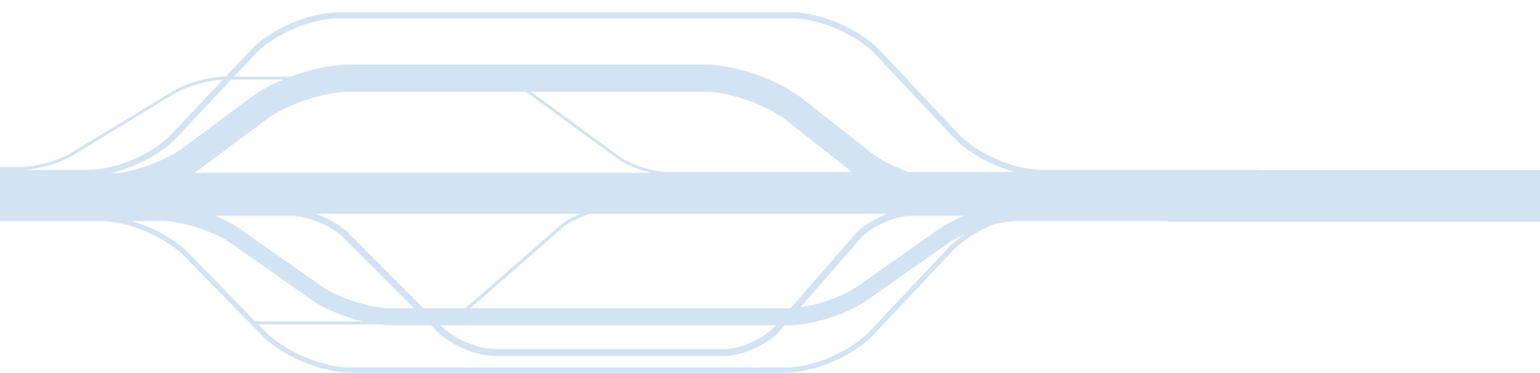
Hot air for  
efficient, reliable  
passenger train deicing

**EPN**  
DEICING  
SOLUTIONS

# Rapid deicing of carriages and locomotives

Deicing with the aid of hot air is an extremely fast, energy-efficient method for deicing carriages and locomotives. For example, using the EPN Solutions method a train comprising a locomotive and 5 or 6 carriages can be deiced within 15 to 20 minutes depending on the outside temperature. Better yet, equipment start-up and recovery time between each deicing cycle is very fast.

EPN Solutions' deicing equipment is based on accessibility and operational reliability. The method was developed to entail low downtime and minimum maintenance. Many problems associated with other methods are avoided by using hot air.



## Here's how it works

- The locomotive and carriages are driven through a 'tunnel' located in a building with peripheral equipment.
- High volumes of hot air at 60-70°C are blown at high speed onto the bogies and chassis of the locomotive and carriages. Return air is recirculated to the hot air generator for reheating.
- By increasing the humidity of the hot air its deicing properties are raised further.
- The locomotive and carriages are driven slowly through the tunnel at a speed adapted to prevailing conditions and the deicing process is performed as the carriages pass through the installation.

## No impact on sensitive equipment

By using hot air in contrast to e.g. hot water, there is no risk of affecting sensitive electrical and electronic equipment on the locomotive and carriages. Deicing is dry, which eliminates the risk of damage such as corrosion.

In energy terms the hot-air method compares well to the most efficient methods on the market, with the added advantages of rapid start-up – ready for use a few minutes from cold, or warmed through for immediate availability. Short recovery times

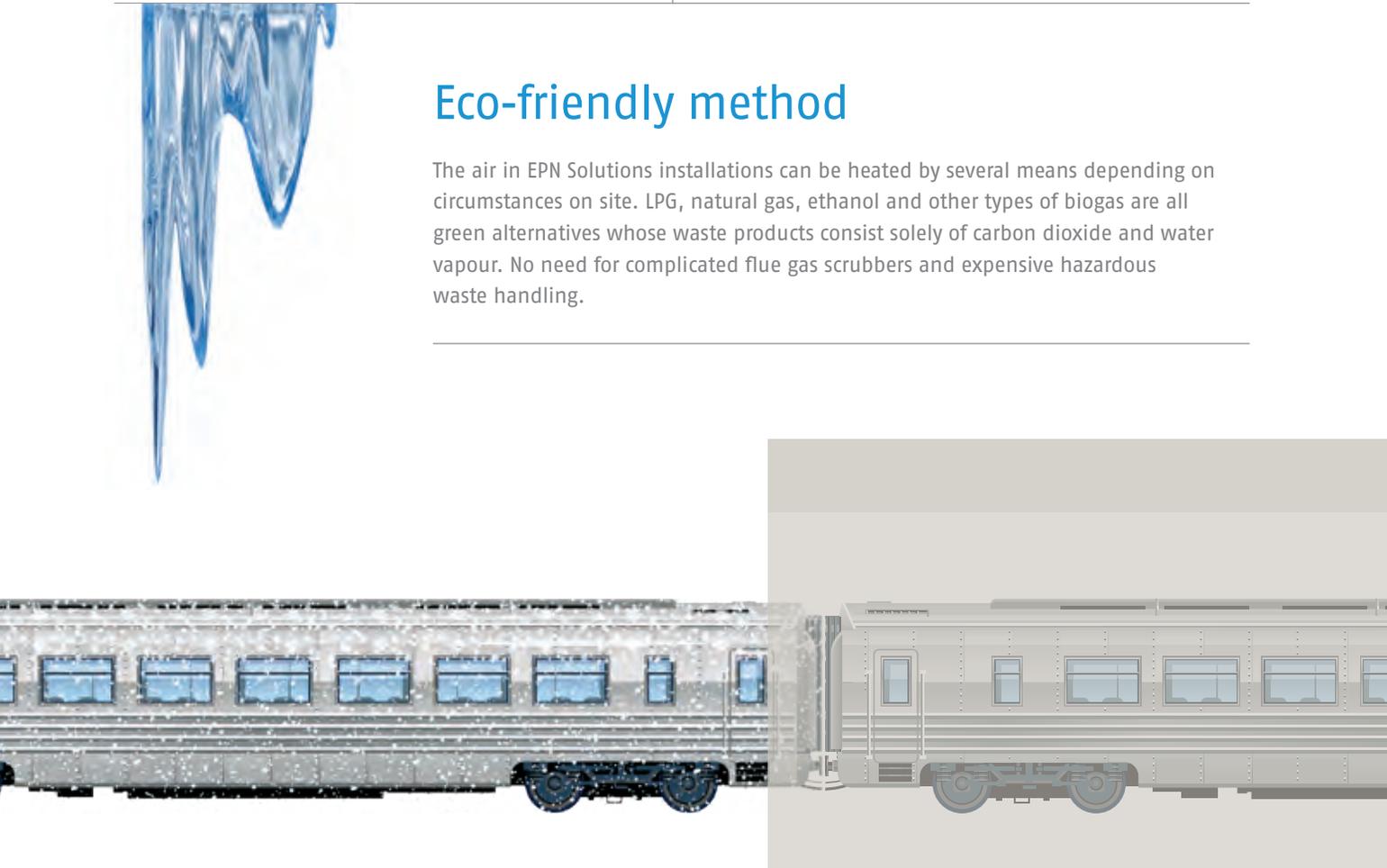
between deicing cycles result in a high-capacity installation. High operational reliability and low maintenance costs contribute further to cost-effective operations.

REDUCED COSTS

# DEICING

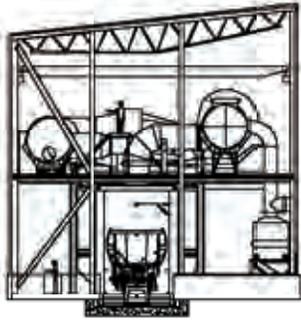
## Eco-friendly method

The air in EPN Solutions installations can be heated by several means depending on circumstances on site. LPG, natural gas, ethanol and other types of biogas are all green alternatives whose waste products consist solely of carbon dioxide and water vapour. No need for complicated flue gas scrubbers and expensive hazardous waste handling.



## Compact installation

A deicing installation from EPN Solutions is compact for maximum utilization of marshalling yard space. A deicing installation can also be combined to advantage with a train-wash system.



## Modular construction for increased flexibility

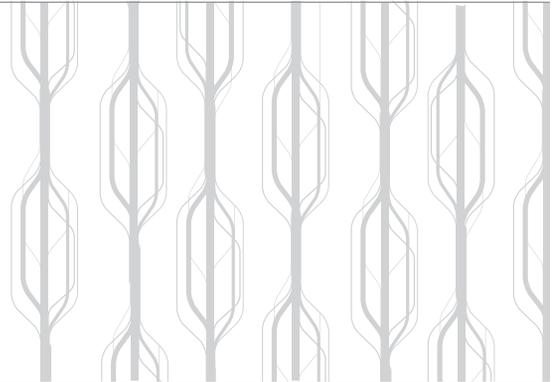
EPN Solutions' deicing installations are of modular construction, which provides flexibility both during assembly and for future use. If needed it is possible to disassemble the installation and relocate it.

Each installation is customized based on capacity requirements and other prevailing conditions.

# passenger trains

## Safer traffic without disruptions

EPN Solutions' hot air installations are the efficient method for deicing locomotives and carriages even under the harshest of temperature conditions. Efficient deicing means that many of the various problems and traffic disruptions caused by snow and ice can be eliminated.



*Using the EPN Solutions' method a locomotive and 5 or 6 carriages can be deiced within 15 to 20 minutes.*



Contact us for further information such as comparative studies of the market's most commonly used deicing methods.

Mattias Öman, Tel. +46 (0)70-371 15 30



**EPN**  
DEICING  
SOLUTIONS