

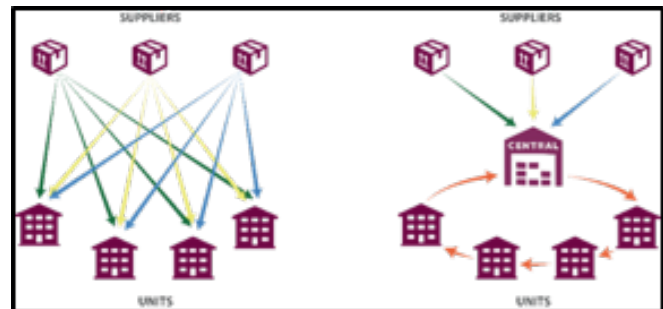
# Electrified City Logistics

## Challenges

Urban traffic stands for a large share of transports and of greenhouse gas emissions. It is an important reason why air quality is beyond limits in many cities today. Many European cities have set ambitious targets to limit such transport. At the same time freight transport is an essential part of a well functioning and sustainable society. These transports could be equalized to the human body's bloodstream. Without deliveries of goods and the collection of reusable materials and waste the society would stop working at a very fast pace.

## The solution

A viable option to lower the number of vehicles in the city, while not restricting deliveries is coordinated city logistics. Basically, it means that the suppliers deliver goods to a central unit and all goods can be delivered to the recipient at the same time. Many recipients are included in the route. However, a coordinated city logistics solution might not be enough. The solution would then be electrified city logistics, meaning using electric vehicles, which would lower noise level and emissions even more.



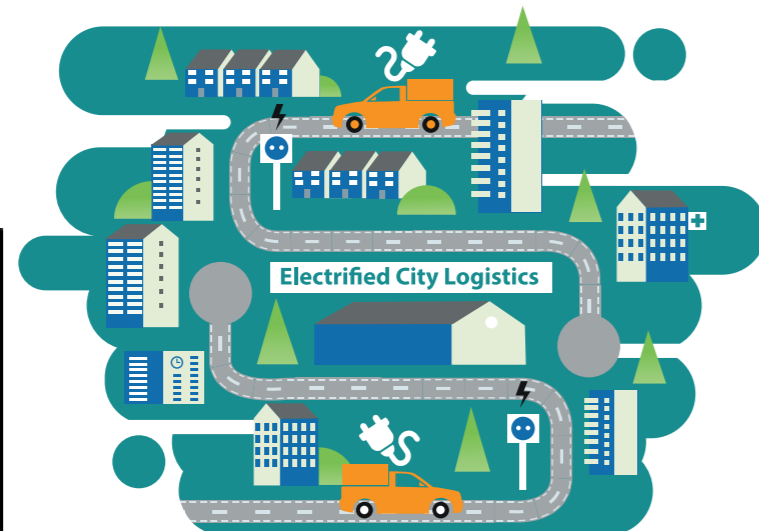
Explaining coordinated city-logistics. Source: Energikontor Sydost

## Outlook

Several European cities have already, successfully, applied different approaches in introducing electric mobility solutions into urban logistics-operations. Using an electric vehicle instead of other clean fuel vehicles is advantageous in areas without many different clean fuel solutions in place, as the electric grid infrastructure for electric vehicles is already in place.

## Going forward

Coordinated city logistics could easily be transferred and deployed in both urban and sub-urban areas. A municipal or city organization is well suited for exploring the concept. Limitations concerns heavy duty transports, driving range and so far, high cost of vehicles. A high number of charging points at the same spot might need network investment to cope with high peak loads.



## STRATEGIC ACTIONS

- Promoting and spreading coordinated city logistics
- Promoting the use of the TH-Wildau step-by-step-guide for introduction
- Supporting local legal framework and steering documents, goals etc
- Strengthening the existing grid

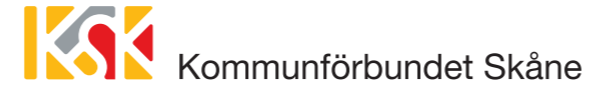
## TECHNICAL SUPPORT DOCUMENT

Technical University of Applied Science Wildau has written an in-depth analysis of electrified city logistics, showing six good and operational cases from Berlin, Tampere and Gothenburg.

Report can be found here:  
[www.scandria-corridor.eu/e-mobility](http://www.scandria-corridor.eu/e-mobility)



# Get in touch



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## Technical reports

Akershus: Assessment of Clean Fuel Deployment and Market Access of Clean Fuels in the Northern Scandria Corridor

RISE: Multifuel energy stations for cars, buses and trucks

Region Skåne: Cooperation between public and private partners in investment of clean fuel infrastructure

Technical University of Applied Sciences Wildau: E-mobility in city logistics

German Energy Agency dena: Pathway to the future – Scandria® Clean Fuel Deployment Strategy  
[www.scandria-corridor.eu/cfds](http://www.scandria-corridor.eu/cfds)

This report was published in October 2018 by Skåne Association of Local Authorities. All technical support documents can be found at [www.scandria-corridor.eu](http://www.scandria-corridor.eu)

The Scandria®Corridor is the shortest link between Scandinavia and the Adriatic Sea covering to a large extent the ScanMed Core Network Corridor. The project Scandria®2Act runs between 2016-2019.



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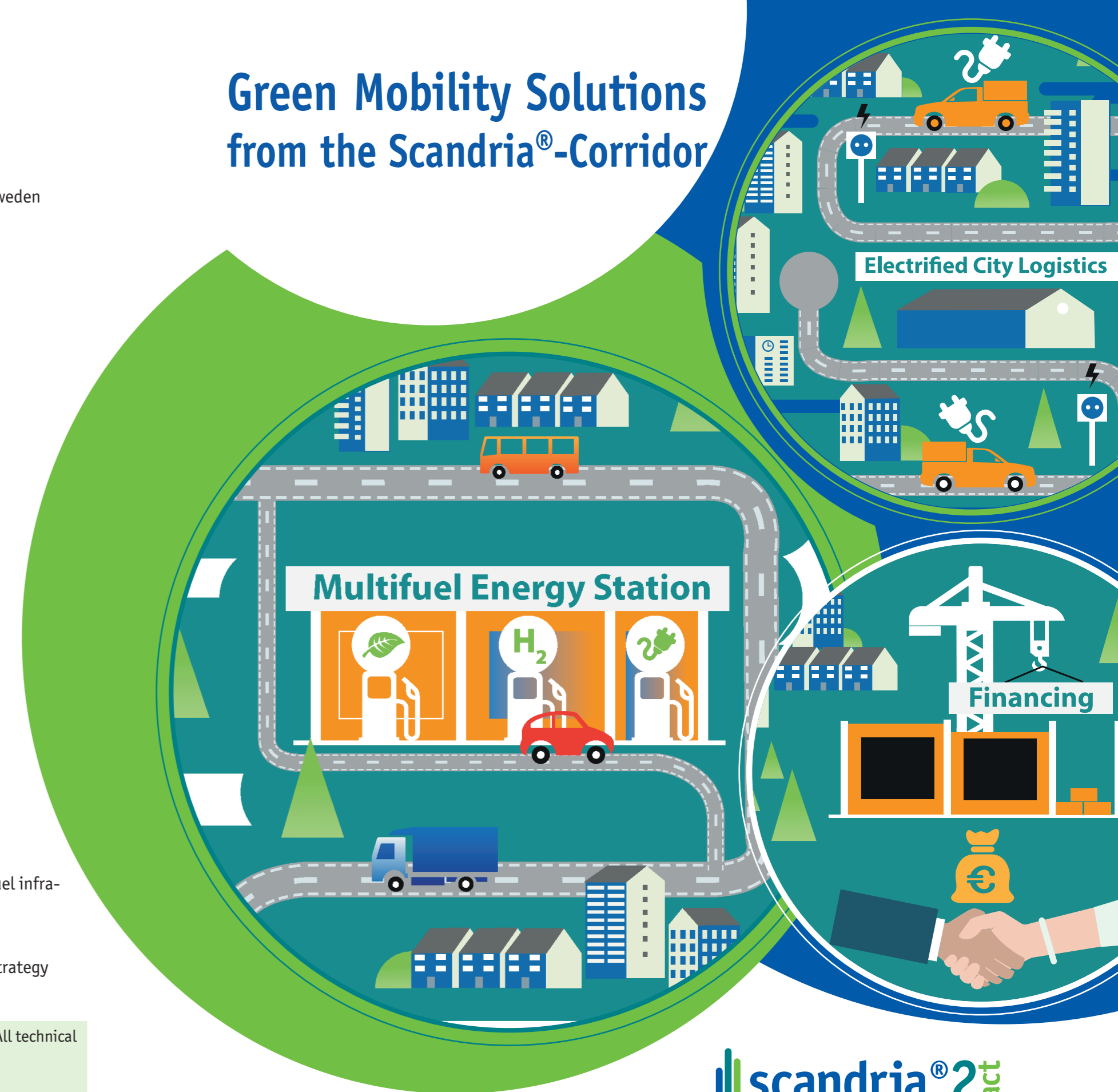
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# Green Mobility Solutions from the Scandria®-Corridor



EUROPEAN REGIONAL DEVELOPMENT FUND



The Scandinavian-Mediterranean transport corridor is the longest one of Europe's nine TEN-T Core Network Corridors. The northern stretch of the corridor includes the urban nodes Helsinki, Oslo, Stockholm, Copenhagen and Berlin, thus connecting major urban centers and economic zones. Scandria<sup>®</sup>2Act is a project running year 2016-2019, which fosters clean, multimodal transport to increase connectivity and competitiveness of corridor regions. A permanent Alliance has been formed.

European Commission President Jean-Claude Juncker outlined in the State of the European Union speech in September 2017:

*"I want Europe to be the leader when it comes to the fight against climate change. Last year, we set the global rules of the game with the Paris Agreement ratified here, in this very House. Set against the collapse of ambition in the United States, Europe must ensure we make our planet great again. It is the shared heritage of all of humanity."*

In 2016 the European Commission adopted a "Low-emission mobility strategy" and also urged the EU-member states to write goals and plans for the introduction of more clean fuel infrastructure. The member states plans were however in some ways inadequate for the high ambitions of the EU.

The demand for clean fuels increases, but not one single fuel will be responsible for cutting all of transport sector's emissions. Instead, the European Commission predicts a combination of several clean fuels.

The importance of work going forward making the transport sector a zero-emission sector increases as the IPCC October 8th 2018 launched the report Global Warming of 1.5 °C with the message to speed up the work. A number of climate change impacts are highlighted that can be avoided by limiting the global warming to 1.5 °C compared to 2.0 °C. This will require "rapid and far-reaching" transitions in land, energy, industry, transport, and cities.

"The ultimate objective of TEN-T is to close gaps, remove bottlenecks and eliminate technical barriers that exist between the transport networks of EU Member States, strengthening the social, economic and territorial cohesion of the Union and contributing to the creation of a single European transport area." Source: EU COM

#### MULTIFUEL ENERGY STATION

Lack of infrastructure makes long distance transport and travelling to some countries with clean fuel vehicles impossible.

#### FINANCING OF INFRASTRUCTURE

Money and environmental ambition do rarely match in the public sector. However public sector needs to be in the forefront. Cooperation with private sector is key.

#### ELECTRIFIED CITY LOGISTICS

Many European cities has set ambitions targets to limit greenhouse gas emissions from urban transport.



## Multifuel Energy Station

### Challenges

The demand for clean fuels increases. There is not one single fuel which will be responsible for cutting all of transport sector's emissions. It is most likely that a range of different fuels and vehicles will develop over time as the clean fuel markets grow.

1. Availability of Clean Fuel Infrastructure is in general too limited to ensure clean transport throughout the Northern Scandria<sup>®</sup>Corridor
2. The cost of producing renewable fuels is in the initial phase much higher than that of fossil alternatives. This may be because of low production volumes and the technology being immature

### The solution

The idea of a Multifuel Energy Station; co-locating clean fuels at one refueling station, is to ensure the supply of many clean fuels, even the ones with very low demand. Clean fuels have good synergies and could be of use to each other. It's likely that the synergies will lower the cost for the clean fuel provider, compared to running several clean fuel stations. Strategically located Multifuel Energy Stations are likely to play an important role making it possible for traffic and transports to drive on clean fuels in-between regions and countries.

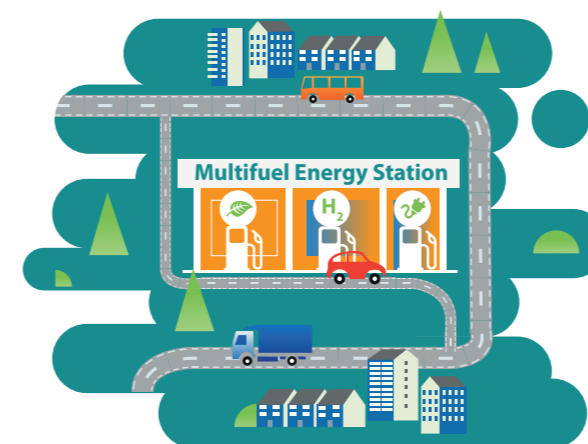
### Outlook

The term "Multifuel Energy Station" has no clear consensus in Finland, Sweden, Norway, Denmark and Germany. A few stations can be found in each country; conceptual or constructed. Synergies between fuels, which should be implemented to lower cost, are not in place and must be further investigated.

### Going forward

Station concepts are not transferable between countries, due to differences in rules for constructing and operating refueling stations. For example, safety distances to fuel storage areas can differ as much as 23 meters between countries. To transfer the concept of a multifuel energy station:

- a new international standard for Multifuel Energy Stations must be developed
- synergies between fuels should be deeply analyzed
- funding for further research should be prioritized



#### STRATEGIC ACTIONS

Offering several clean fuels at the same station is most efficient.

- Support should be given to promote co-location
- International standards for construction must be clarified
- Harmonized requirements for installation and classifications should be demanded by procurers

#### TECHNICAL SUPPORT DOCUMENT

RISE Research Institutes of Sweden has written an in-depth analysis of co-locating clean fuels: Multifuel energy stations for cars, buses and trucks (2018) E. Wiberg and P. Bremer. No actual cases studied, a list of cases shown.

Report can be found here: [www.scandria-corridor.eu/multifuel](http://www.scandria-corridor.eu/multifuel)



## Public-private financing of clean fuel infrastructure

### Challenges

Infrastructure investments are crucial to get clean fuel markets going. Initially, these are often virgin markets. Therefore, the risk is high, and financing can be an obstacle both for the public and the private sector. However, investments in infrastructure is needed.

1. Regional and local decision makers will become more important as the main driver for shifting to alternative fuels
2. Municipalities and regions have the chance to be the main driver for clean vehicles while demonstrating their concern for air pollution control

### The solution

Public-private cooperation for infrastructure investments of clean fuels is a great option as it creates good conditions for market enlargement at the outset and creates a risk sharing that lowers the investment risk for both the public and the private.

Public partners can create a demand which is almost break-even for clean fuel infrastructure by being their own customer demanding clean fuel public transportations, waste disposal trucks, vehicle fleet etc. Collaboration with neighbouring municipalities will strengthen the growth of the market.

#### STRATEGIC ACTIONS

Public-private financing of clean fuel infrastructure can create conditions for enlargement of the market by introducing:

- The model of public-private cooperation
- The business model "be your own customer"
- Collaboration between neighbouring municipalities

### Outlook

Co-operation between the public and the private is nothing new. However, it can be difficult to understand which form of co-operation which is the best choice to minimize risks. There are several good examples on how to share the risk and the financing between the public and the private: economic association; limited company; regulating contracts. EU-financing is often a welcome contribution.

### Going forward

Public-private cooperation and financing of clean fuel infrastructure can be copied and spread from one municipality to another. By adjusting the set up for local conditions, examples found in the technical support document are all transferable to other small municipalities. Local policy frameworks will continuously be needed to support deployment and transferability.



#### TECHNICAL SUPPORT DOCUMENT

Region Skåne assigned Trivector Traffic to write an in-depth of public-private cooperation and finance of clean fuel infrastructure in small municipalities. Five Swedish cases have been studied.

Report can be found here: [www.scandria-corridor.eu/ppp](http://www.scandria-corridor.eu/ppp)

