

Road Show Berlin

*Clean fuel deployment in the
Northern Scandria Corridor*

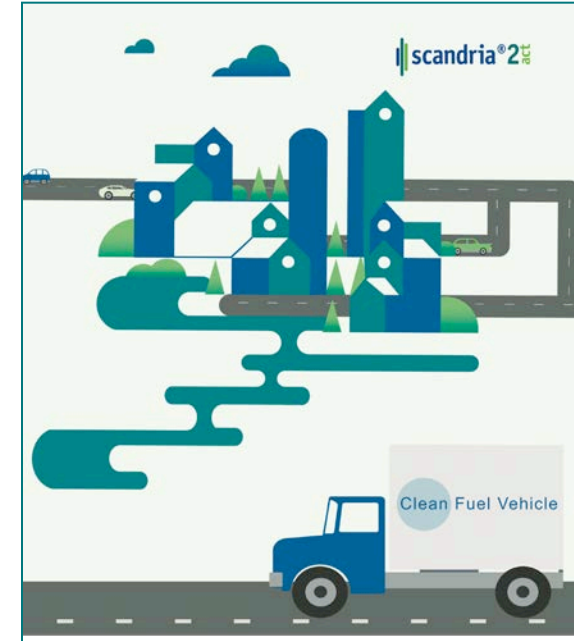
Jan Carsten Gjerløw

Akershus County Council

Scandria®2Act WP leader

Outline

- Scandria2Act
- Status Norway
- Status Northern Scandria Corridor
- Project findings and recommendations



Scandria2Act

- Main objective is to foster clean, multimodal transport to increase connectivity and competitiveness of corridor regions while minimising negative environmental impact induced by transport. For this purpose, project partners have developed a joint project approach addressing:

Work packages

- **WP2: the deployment of clean fuels,**
- WP3: the deployment of multimodal transport services and
- WP4: the establishment of a multilevel governance mechanism, the Scandria[®]Alliance

WP2 Clean Fuel - Partners

1. Akershus County Council (N). Work Package leader
2. Region Skåne (S)
3. Skåne Association of Local Authorities (S)
4. RISE – Research Institutes of Sweden (S)
5. German Energy Agency (dena) (D)
6. Technical University of Applied Science, Wildau (D)
7. Project management: Joint Spatial Planning Department Berlin – Brandenburg



Definition- Clean Fuels / Alternative Fuels

- According to *Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure*:
- Electricity – BEV (Battery Electric Vehicles)
- Hydrogen – FCEV (Fuel Cell Electric Vehicles)
- Natural gas - CNG/LNG (Compressed / Liquefied Natural Gas)
- Biomethane (upgraded biogas) – CBG/LBG
- *Aim of Scandria2Act: To foster deployment of clean fuels in the Scandria corridor, in a multi-fuel approach*

Norway



Akershus County

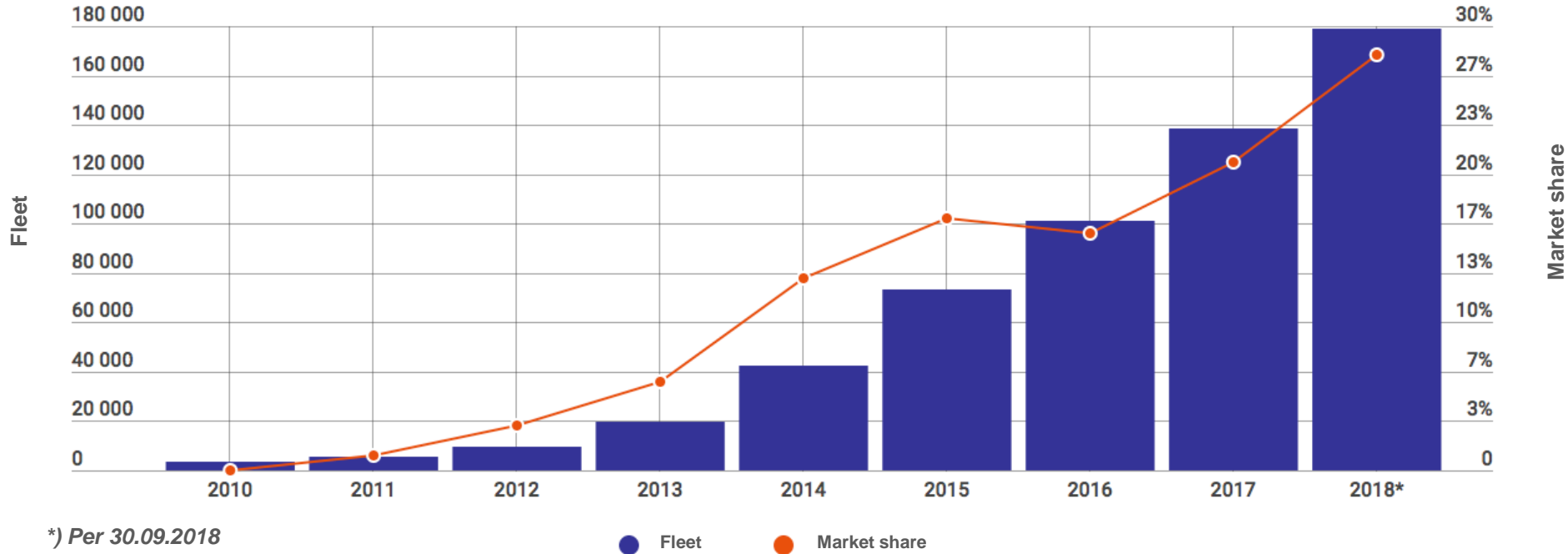


National targets

■ National Transport Plan, adopted June 2016

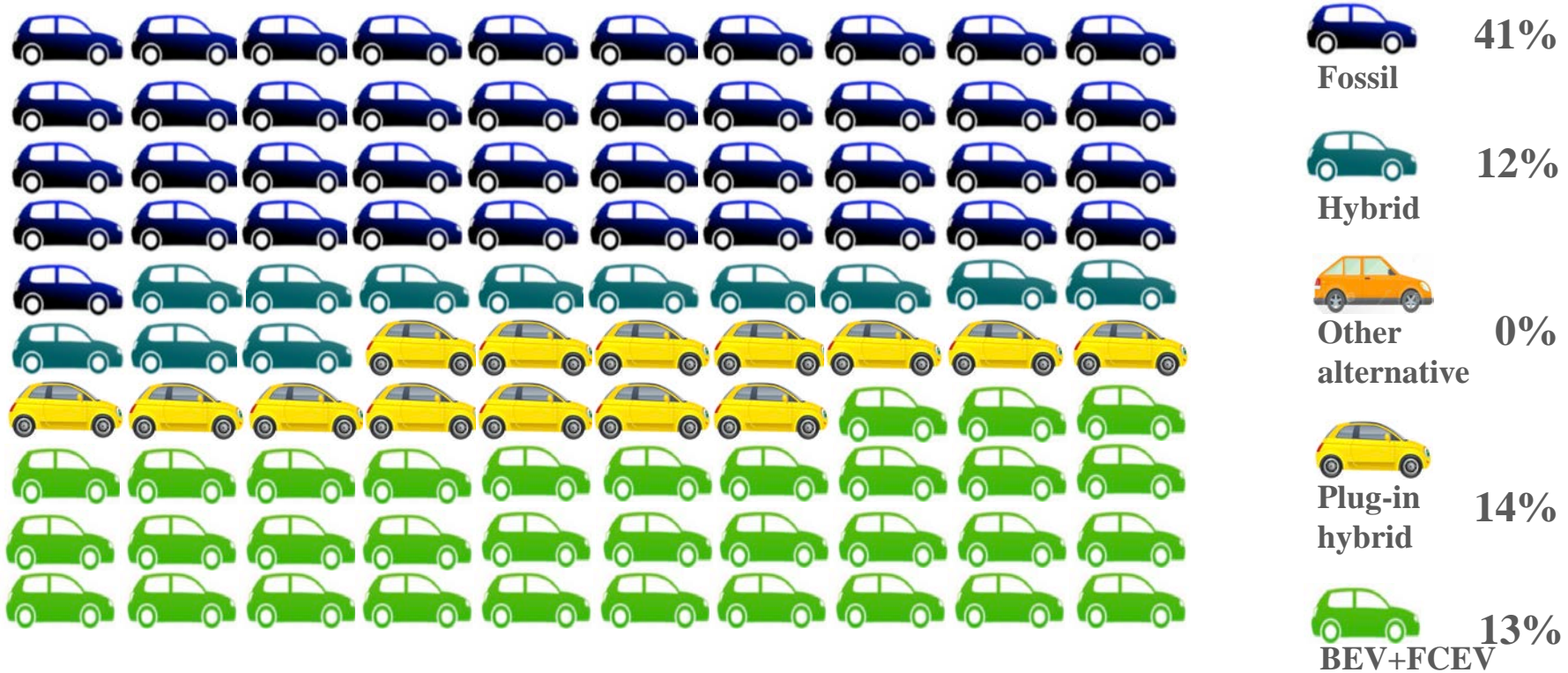
- After 2025 shall all new private cars, buses and light commercial vehicles be zero-emission vehicles
- By 2030, new heavier distribution vans, 75 % of new long-distance buses, 50 % of trucks be zero emission
- By 2030, all goods distribution largest cities shall be virtually emission free in line with EU's ambitions
- Similar targets for transport on sea, train and aviation
- In 2050, the whole transport sector to be virtually emission free / climate neutral

BEVs in Norway: Market share and total fleet



Source: The Norwegian EV Association

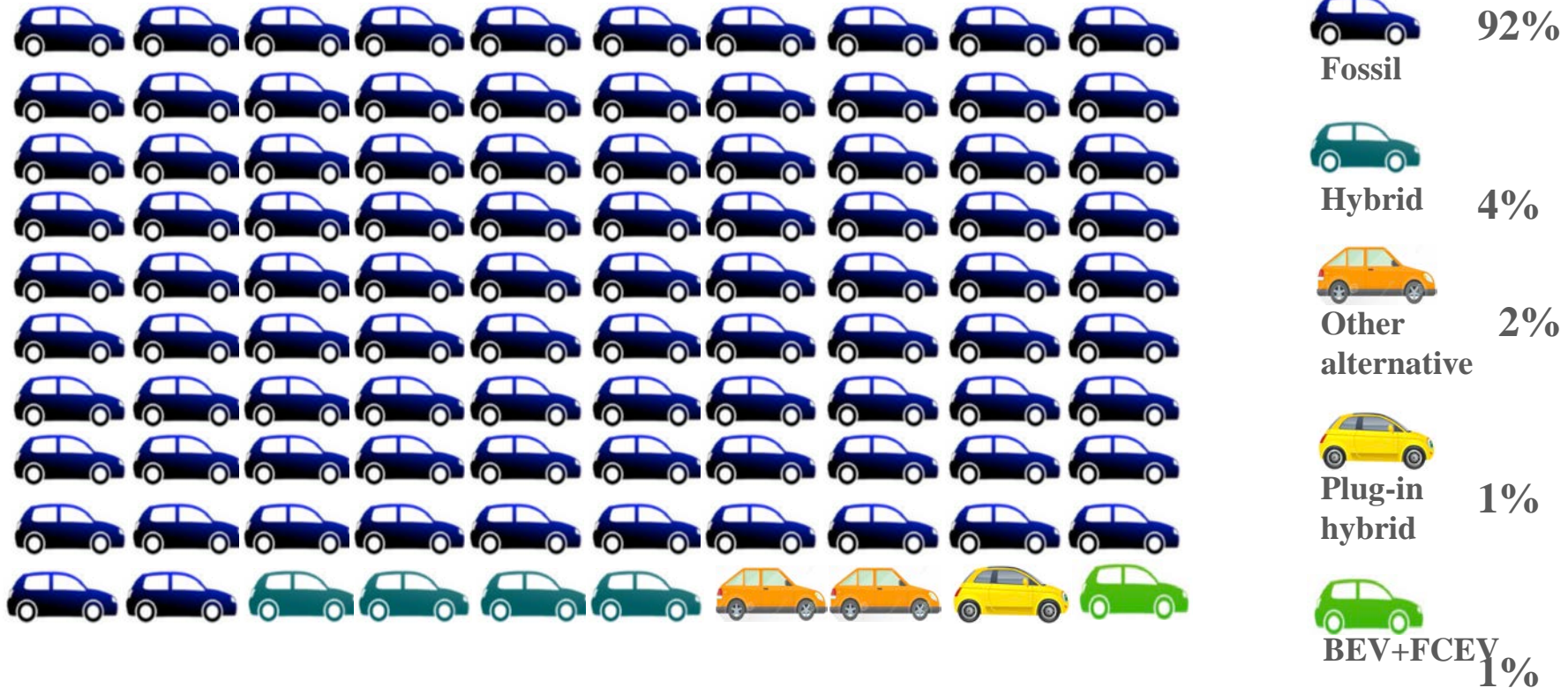
Norway: Market share, new registrations in Q3-2018



BEVs: About 7% of the total fleet of passenger vehicles

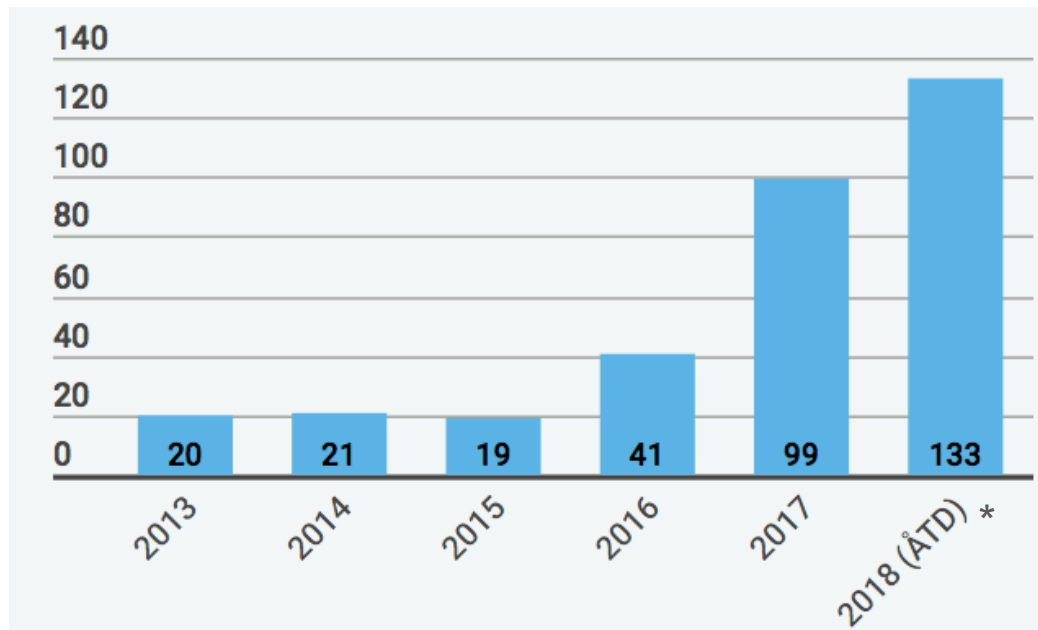
Source: The European Automobile Manufacturers' Association (ACEA)

EU: Market share, new registrations in Q3-2018



Source: The European Automobile Manufacturers' Association (ACEA)

FCEVs in Norway: Total number



*) Per 31.10.2018

Source: The Norwegian Hydrogen Association



Wanted!



Taxis will become zero emission

- Norway: The counties are responsible for issuing taxi permits
- New emission standards are now adopted
- Akershus and Oslo: All Taxis will be ZEVs by 2023
- A total of 2.050 vehicles



National incentives for zero emission vehicles / infrastructure

Incentive	Year of introduction
Exemption from registration tax	✓ (1990/1996)
Reduced annual license fee	✓ (1996/2004)
Exemption from road toll	✓ (1997)
Free Municipal parking *	✓ (1999)
Reduced company car tax	✓ (2000)
VAT exemption	✓ (2001)
Access to bus lanes *	✓ (2003/2005)
Reduced rates on state ferries	✓ (2009)
Financial support for fast charge stations **	✓ (2009)
Financial support for hydrogen stations	✓ (2017)
Financial support for hydrogen vehicles fleets for professional use	✓ (2017)
Increased wreckage refund to ca. 1.500€ when replacing fossil LDV with zero emission	✓ (2018)

**) Incentives is gradually being adjusted*

***) Different programmes, no general support*

Source: Scandria2Act



Akershus County Council incentives for clean fuels

- Funding aid to hydrogen refuelling stations and charging stations – and LBG stations?
- Operating aid to hydrogen refuelling stations
- Support scheme for hydrogen taxis
- Support scheme for municipal hydrogen vehicles
- Support for 5 hydrogen buses in Oslo-Akershus
- Supporting regional R&D projects
- Supporting regional and international networking project
- Strong commitment to foster clean fuels!



BI



GASS



Jeg elsker byen min



Oslo-Akershus: 5 + 10 Hydrogen buses



4 hydrogen trucks in 2018

Switzerland: 1.000 Fuel Cell Trucks



Source: H2Energy



What about
OEMs in

- Germany?
- Sweden?
- China?

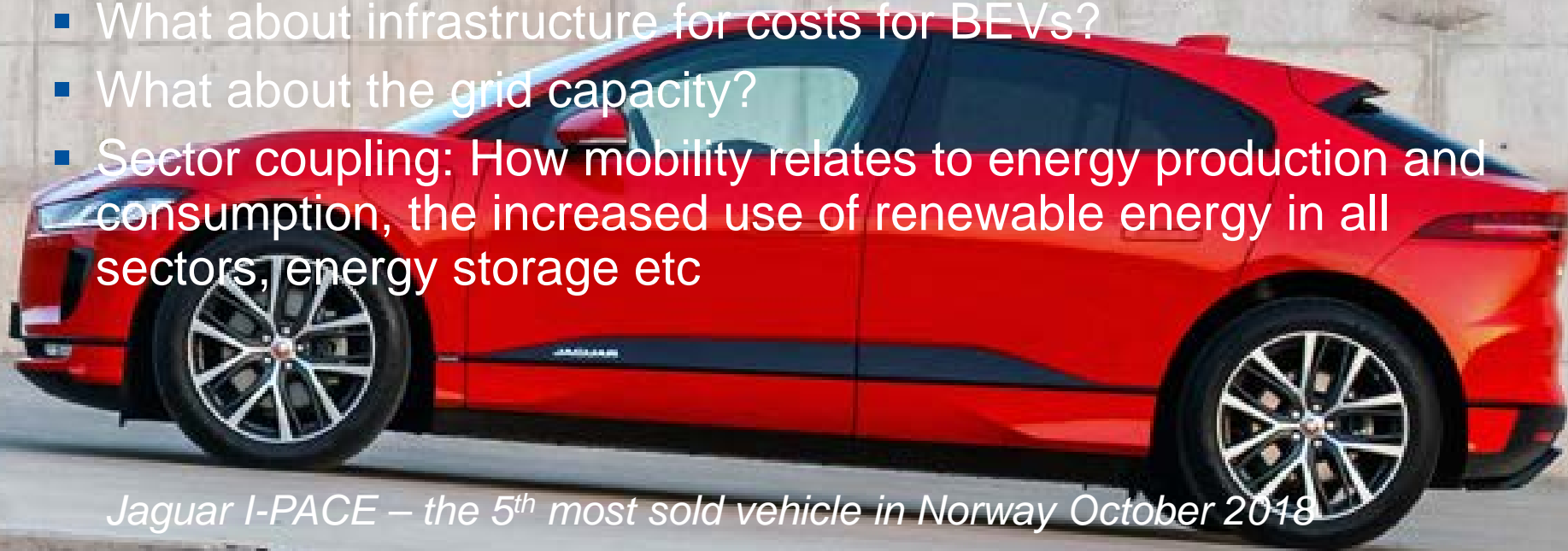
Nikola Tre

What could be learned from Norway?

- A fast transition to zero emission (passenger) vehicles *is* possible
- People want / demand zero emission vehicles
 - But the vehicles aren't there - there is a 2 years waiting list for the new Hyundai Kona
- A number of incentives are necessary in an early stage
 - Purchasing price important – TCO not that important
 - All Norwegian incentives are relevant for other countries
- It comes with a certain cost...
 - And being first has an additional cost
- Long-term policies are necessary

Some relevant questions

- Is the development in Norway representative for other European countries?
 - What about the larger countries – like Germany?
- What about infrastructure for costs for BEVs?
- What about the grid capacity?
- Sector coupling: How mobility relates to energy production and consumption, the increased use of renewable energy in all sectors, energy storage etc



Jaguar I-PACE – the 5th most sold vehicle in Norway October 2018





scandria® 2⁺

sustainable and multimodal transport action
in the scandinavian-adriatic corridor

WP2 - project ambitions and activities

- Scandria®2act partners aim at fostering the corridor-wide deployment of clean fuels in an inclusive multi-fuel approach.

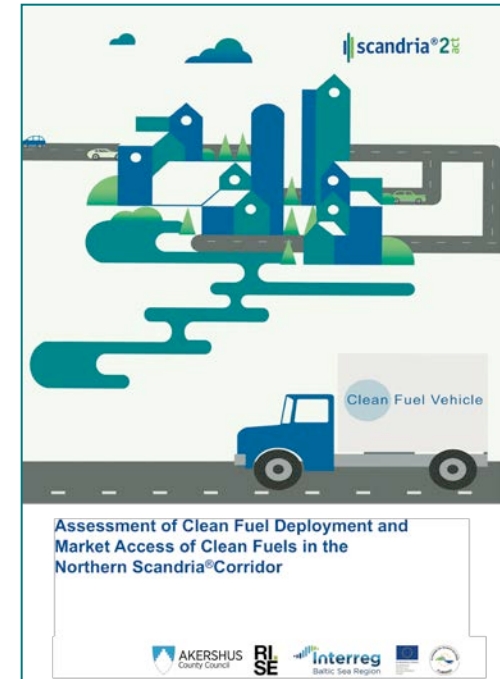
- Output from WP2:
 - Assessment of Clean Fuel Deployment and Market Access of Clean Fuels in the Northern Scandria®Corridor (April 2017)
 - Increasing regional capacity to implement clean fuels in a corridor perspective
 - Clean Fuel Deployment Strategy
 - Road Shows in Skåne, Berlin and Oslo-Akershus

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

Content

- Clean Fuel Infrastructure
- Clean Fuel Vehicles
- Incentives and legislation
- Market access of Clean Fuels
- Benchmark in the European Context
- Obstacles and success factors
- Best practice examples

Download report from: www.scandria-corridor.eu



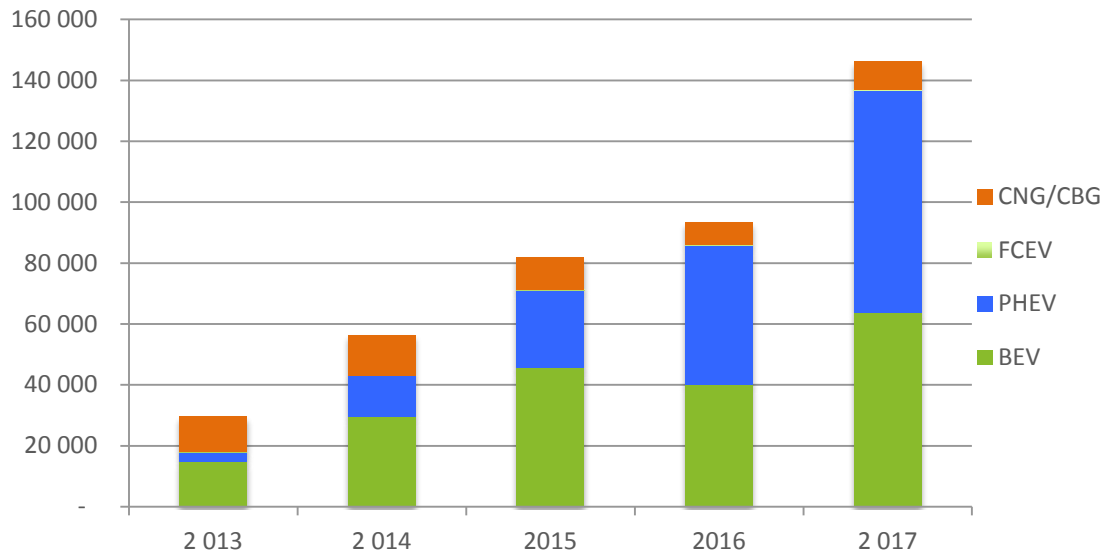
Key findings

- 1. The deployment of Clean Fuels in the Northern Scandria[®]Corridor is developing too slowly to reach the desired national and EU/EEA targets for reduction of CO₂ emissions from transport.**
- 2. Availability of Clean Fuel infrastructure is in general too limited to ensure clean transport throughout the Northern Scandria[®]Corridor.**
- 3. Stronger national incentives are important to foster infrastructure development and the use of Clean Fuels**
4. There is a need for standardised payment systems for Clean Fuels across the national borders.
5. A limited model selection of Clean Fuel vehicles and especially the limited consumer perception of these cars are obstacles to market development.

Key findings

6. Public transport plays an important role in increasing the use of Clean Fuels.
- 7. Regional and local decision makers will become more important as the main driver for shifting to alternative fuels in the near future.**
- 8. The regional perspective is important in ensuring the development of Clean Fuel infrastructure in such a way that it permits, and stimulates, transport with Clean Fuels**
9. The cost of producing renewable fuels except electricity is in generally much higher than that of fossil alternatives in an early stage.
10. There are several best practice examples of setting frameworks, using incentives and carrying out concrete measures within the Northern Scandria[®]Corridor.

Key finding; Development is slow



"The deployment of Clean Fuels in the Northern Scandria® Corridor is developing too slowly to reach the desired national and EU/EEA targets for reduction of CO₂ emissions from transport."

- *Total number of alternative fuels passenger vehicles sold in Germany, Denmark, Sweden, Norway and Finland, 2013 - 2017. Numbers are **new registrations** and on a **national level**.*

Source: Scandria2Act and European Automobile Manufacturers' Associations

Key finding; Stronger incentives are needed

“Stronger national incentives are important to foster infrastructure development and the use of Clean Fuels”

- The use of incentives varies within the region
- Read more about the effect of different incentives in the Clean Fuel Deployment Strategy published by The German Energy Agency (dena)

Country	Purchase Subsidy	Registration Tax Benefit	Ownership Tax Benefit	Company Tax Benefit	VAT Benefit	Other Financial Benefit	Local Incentives	Infrastructure Incentives
Germany	✓		✓	✓			✓	
Denmark	✓	✓					✓	✓
Sweden	✓		✓	✓				✓
Norway		✓	✓	✓	✓	✓	✓	✓
Finland		✓	✓					

Key finding; Infrastructure



Source: Scandria2Act

“Availability of Clean Fuel infrastructure is in general too limited to ensure clean transport throughout the Northern Scandria®Corridor”

- Map: Refuelling stations available in the city regions and along the main roads in the Northern Scandria®Corridor.
- The number is too low to ensure the possibility for transport of goods based on LBG/LNG throughout the Corridor.

LBG/LNG = Liquid Biogas / Natural Gas

Key finding; Cities and Regions are drivers

“Regional and local decision makers will become more important as the main driver for shifting to alternative fuels in the near future”

“The regional perspective is important in ensuring the development of Clean Fuel infrastructure in such a way that it permits, and stimulates, transport with Clean Fuels”

- Interregional cooperation is important to harmonize use of incentives and to foster use of clean fuels in the corridor perspective.
- There is a need for projects like Scandria®2Act to speed up the deployment of clean fuels in the Northern Scandria®Corridor!

Green Mobility Solutions from the Scandria®-Corridor

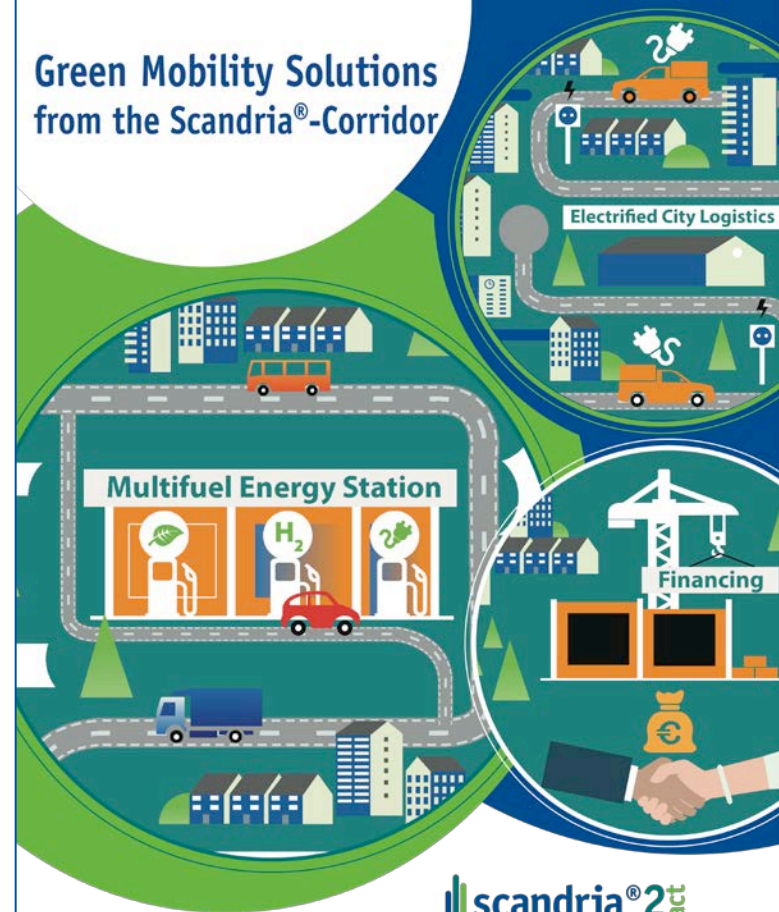


Kommunförbundet Skåne



Technische
Hochschule
Wildau
Technical University
of Applied Sciences

Green Mobility Solutions
from the Scandria®-Corridor



scandria® 2^{act}

Interreg
Baltic Sea Region



EUROPEAN
REGIONAL
DEVELOPMENT
FUND



Challenges



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

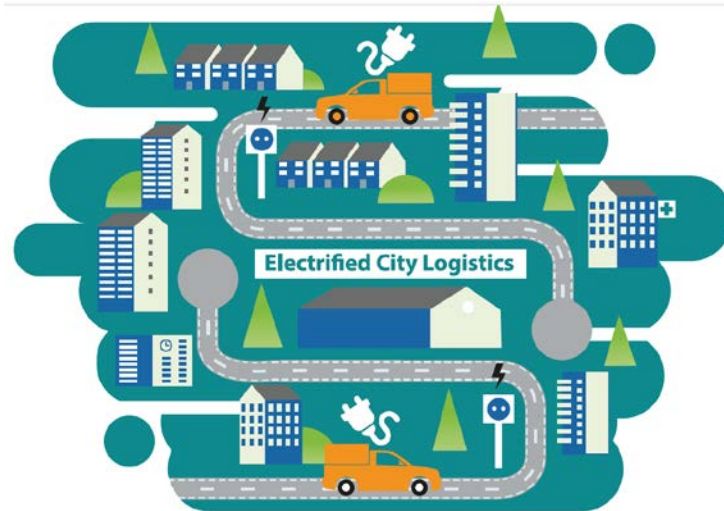
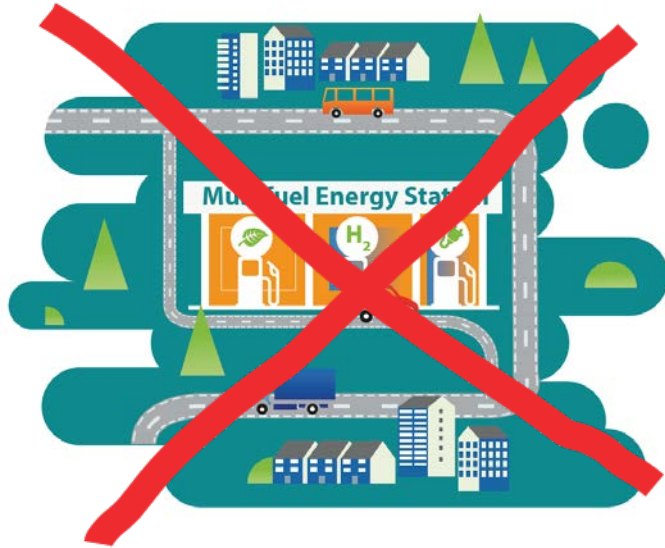
Many European cities has set ambitions targets to limit greenhouse gas emissions from urban transport.



Suggested "solutions"

1. Multifuel energy station for cars, buses and trucks (RISE)
 - All fuels will gain when synergies between fuels are taken into account
2. Electrified city logistics (TH Wildau)
 - Securing inner city deliveries with zero emission vehicles
3. Public-private cooperation and finance of clean fuel infrastructure in small municipalities (Region Skåne)
 - Lowering the risk of investment

Transferability



Relevance for regions

- What can the city / region do to provide effective processes for regulation – to speed up the deployment
- What is the role of the city / region for providing funds for infrastructure building and operation?
- What to take into consideration in spatial planning?
 - What fuels should be provided in the urban areas?
 - Where can / should Multifuel Energy Stations be located?
 - How should the city logistics be solved using clean fuels?
 - Last mile delivery
 - Need for areas for reloading of trucks – from long distance to local / regional distribution

Clean Fuel Deployment Strategy

- Developed by dena – published this month
 - Recommendations - a catalogue of strategic measures derived from a strategic diagnosis of clean fuel deployment in the Scandria[®]-Corridor.
 - Addresses action fields of strategic relevance
 - Depicts the development of the clean fuel market, clean fuel technology development and clean fuel infrastructure.
 - It identifies relevant measures needed to enable clean fuel deployment in a corridor perspective.
 - Addresses the issues of political coordination, financial incentives, standardization and information as well as the financing models of clean fuel infrastructure.
 - The goal is to enable regional and national decision makers to identify effective and efficient actions to support clean fuel deployment.

Clean Fuel Deployment Strategy

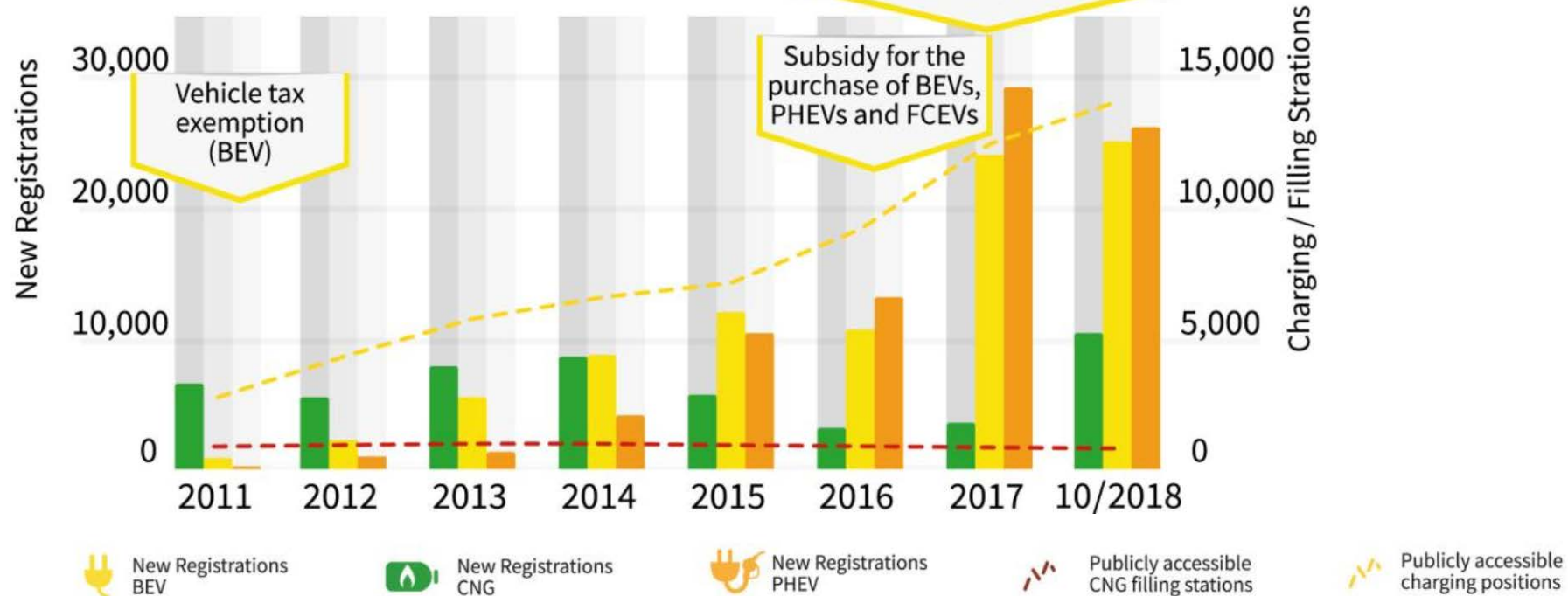


Germany

Comprehensive charging infrastructure funding programme, Reduced charges for loading at work

Subsidy for the purchase of BEVs, PHEVs and FCEVs

Vehicle tax exemption (BEV)

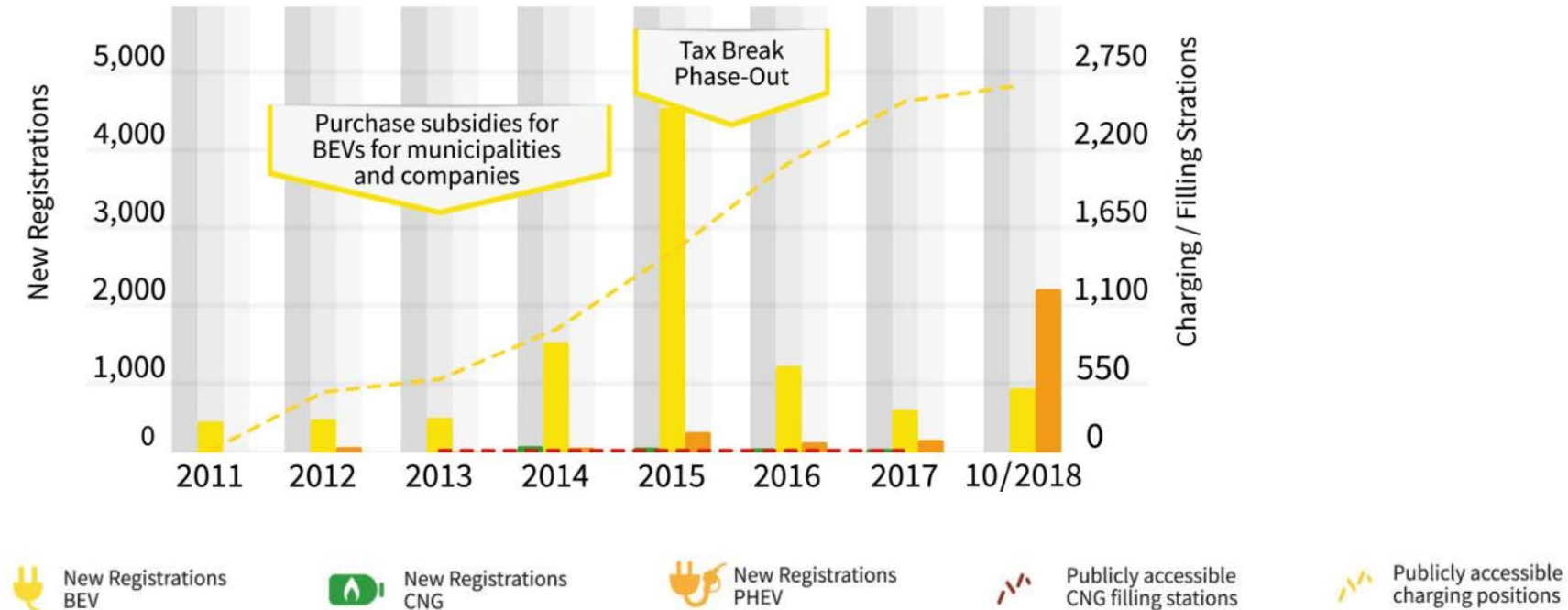


Clean Fuel Deployment Strategy

Denmark

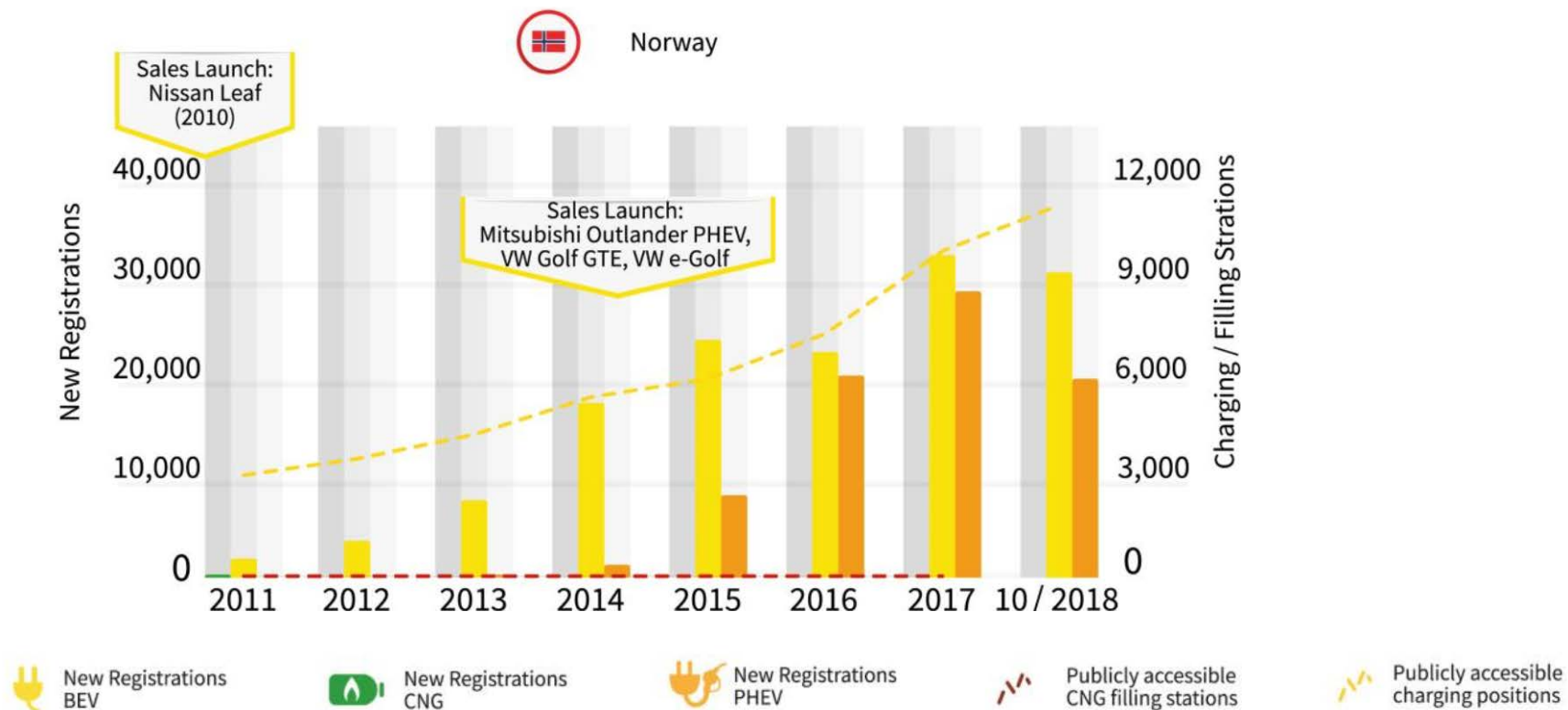


Denmark

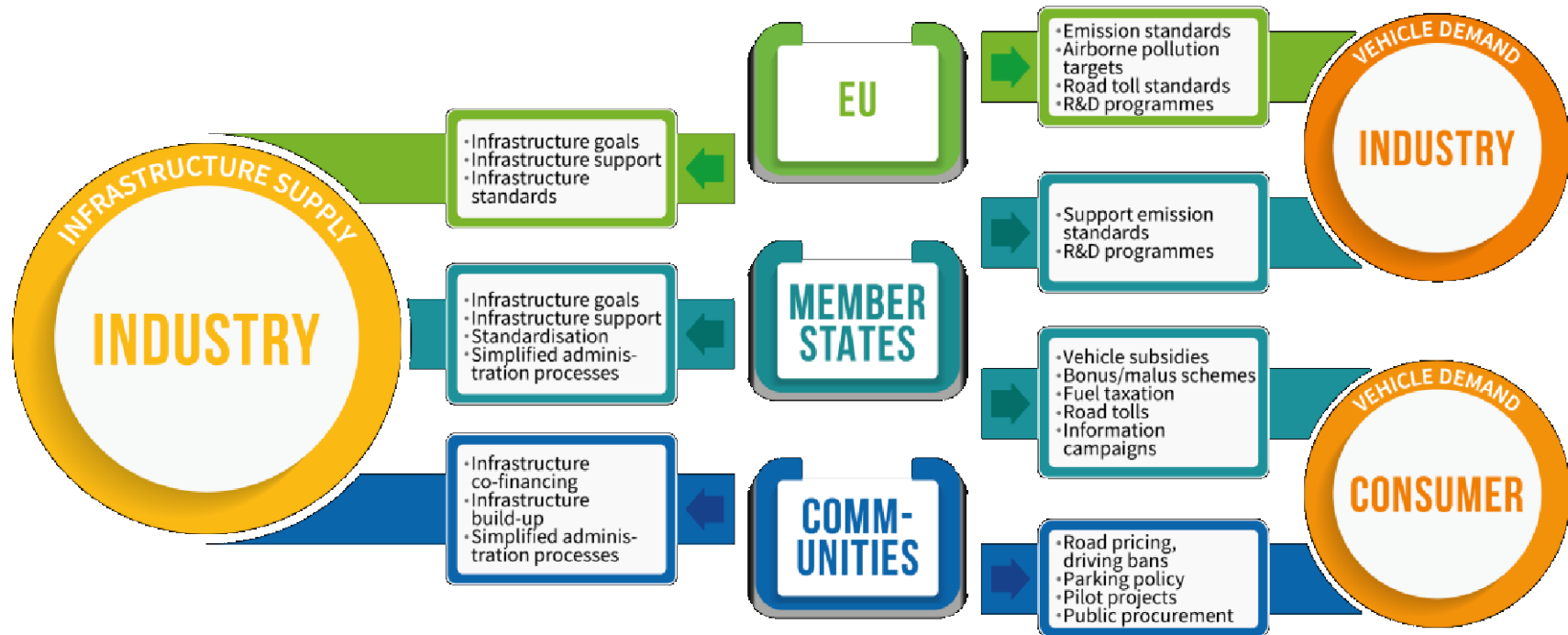


Clean Fuel Deployment Strategy

Norway



Clean Fuel Deployment Strategy



Some challenges – Norwegian perspective

- Bring the vehicles to the (Norwegian) market!
 - BEVs
 - FCEVs
 - Trucks – all clean fuels
 - Buses – all clean fuels
- Increase the speed in the transition to alternative fuels
 - We need a faster development in the corridor
 - Incentives on national levels
 - Stimulate demand – cities, regions, national

Some challenges – Scandria perspective

- Increase the demand for alternative fuels
 - Buy vehicles
 - Demand transport on alternative fuels
 - Motivate private persons and the industry to do the same
- Stimulate the development of infrastructure
 - It is crucial to allow transport in the corridor perspective
- Increase regional cooperation
 - Transport is a cross-border challenge – and business
 - Regions and cities are driving the development
 - More cross-border cooperation is needed

Scandria2Act Road Show Akershus

- 5th of December 2018
- Venue: Norway Trade Fairs, Lillestrøm
- On the agenda:
 - H2 Energy – 1 000 hydrogen trucks in Switzerland
 - California Fuel Cell Partnership – update from the US
 - Dena – Clean Fuel Deployment Strategy
 - Institute of Transport Economics – can national targets be met?
 - Scania, Air Liquide and more...
- More info: <http://www.scandria-corridor.eu>

Vielen dank!

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Download reports from <http://www.scandria-corridor.eu>



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