



**SIEMENS**

# eHighway Southern California

**Project and Market Outlook**

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# What is eHighway?

## -Electrification of hybrid cargo trucks via an OCS

### eHighway system description

#### Siemens eHighway

Electrified heavy duty road transport, which reduces emissions, is efficient and economical



Direct energy transmission = **efficiency**

Energy **recuperation** from braking and feed into power grid is possible

The **safety** of the catenary system has been proven in various across various applications (e.g. trolley buses, tramways)

Life-cycles and low operation and maintenance **costs** have been shown through rail and tramway operations.

The catenary system allows for quick **integration** into existing traffic infrastructure

# Why is eHighway important?

-Road-freight emissions are a problem for port cities

**Ease of integration = effective solution to emissions challenges**



## **Adaptable to all situations**

- Applicable for bridges, interchanges, tunnels and low clearances
- Operable on two-lane electrified highways
- No system change in established point-to-point connections

## **No concessions on truck availability and performance**

- No decrease on axle weight rating and load capacity
- Full electric operation up to maximum highway speed

## **Operability in all traffic situations**

- Passing
- Lane changing
- Idling in traffic

# Electrification is attractive

## -highly frequented routes

### eHighway application fields



#### Shuttle transport

- Solution for high frequency shuttle transport over short and medium distances (<30 miles)
- Lower fuel consumption and longer lifetime
- Reduction of air and noise pollution



#### Electrified mine transport

- Connection of pits and mines to storage or transit locations
- Minimization of harmful emissions
- Sustainable, clean and economical mine operation



#### Electrified long-haul traffic

- Economical and sustainable alternative for road freight transport
- Significant reduction of CO<sub>2</sub> emissions
- Substantial cost savings for freight carriers

# eHighway Test Track -Berlin, Germany



## Project

- Development cooperation with Scania & Volvo
- Test track of 1.2 miles with realistic highway conditions (bridge, signs, curves, etc)
- Technical assessment of complete system by Technical University of Dresden & Germany's Federal Highway Research Institute.
- Analysis of the economic and ecological impacts by German ministries of Environment, Economy and Transport

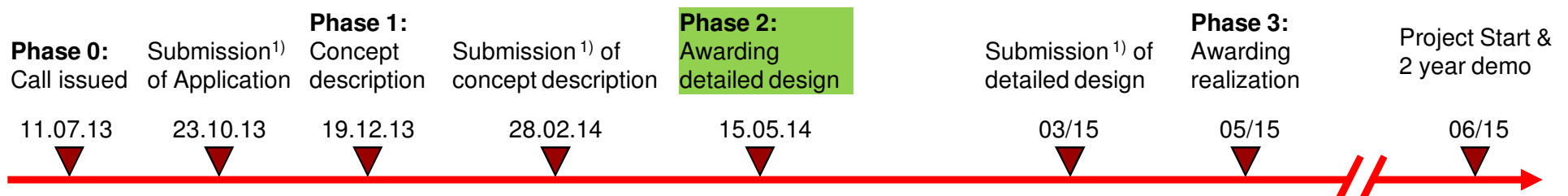
# eHighway in Sweden

## -Pre-Commercial Procurement of Demonstration

### Process Specifics

- **Trafikverket** (the Swedish Transport Administration) initiated an **Innovation Procurement Process (IPP)** for demonstration projects with **electric road systems (ERS)** for heavy transport (>16 tons) with a preliminary budget of € 11.5m
- **Goal:** Realization of demonstration projects to evaluate different ERS-technologies prior to a potential introduction on the Swedish road network

### Time line as announced by the customer



<sup>1)</sup> Each submission is followed by an evaluation by the customer with a Go/NoGo for the process as a whole and the individual competitors

### Process / Project Benefits

- Very positive political environment → target 2030 & 2050
- Market entry potential → strong interest from mining industry

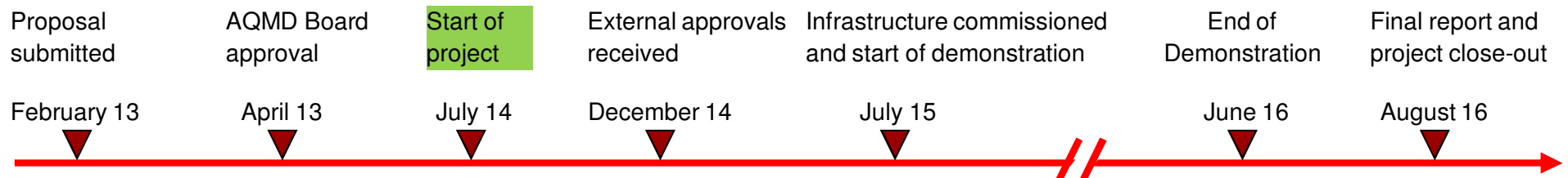
# eHighway in the U.S.

## -City of Carson Demonstration Project

### General Project Information

- Very high volume of road freight traffic due to the ports. **AQMD** (Air Quality Management District) is pursuing environmental relief for the LA Metropolitan area
- Siemens eHighway concept as chosen solution
- **Goal:** To promote the implementation of zero emission goods movement technologies, and to demonstrate the most viable technology to be adopted for a future, regional zero-emissions corridor

### Timeline


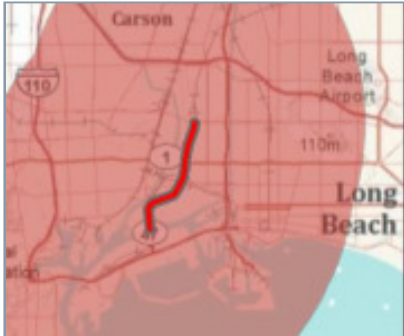




### Project scope

- One mile of infrastructure on Alameda St as connection to near-dock rail terminals.
- Different hybrid and zero-emission trucks supplied by Volvo Trucks and local truck manufacturers



# Projects and Market Outlook -Southern California

Demonstrator	Near-dock rail connection	Interstate-710	Regional connection
 <ul style="list-style-type: none"> <li>▪ <b>Length:</b> ~1 mile</li> <li>▪ <b>Timeline:</b> 2015</li> <li>▪ <b>EH-Vehicles:</b> 4</li> </ul>	 <ul style="list-style-type: none"> <li>▪ <b>Length:</b> ~5 miles</li> <li>▪ <b>Timeline:</b> 2016-2019</li> <li>▪ <b>EH-Vehicles:</b> 400</li> </ul> <p>Source: POLA/POLB strategic plan 2019</p>	 <ul style="list-style-type: none"> <li>▪ <b>Length:</b> ~22 miles</li> <li>▪ <b>Timeline:</b> 2020-2030</li> <li>▪ <b>EH-Vehicles:</b> 46,000</li> </ul> <p>Source: I-710 Draft EIR/EIS</p>	 <ul style="list-style-type: none"> <li>▪ ~30 miles of East-West Freight Corridor (EWFC)</li> <li>▪ Planned before 2035</li> </ul> <p>Source: SCAG regional transportation plan</p>

Implementing Siemens' eHighway concept in South California is an unique opportunity to make the area more sustainable through a totally new solution

# QUESTIONS?

A large port terminal with multiple blue gantry cranes and container ships. The cranes are positioned over the ships, which are stacked with colorful containers. The sky is overcast.

Visit the link below for additional news coverage of Siemens eHighway solution:  
<http://abc7.com/news/new-ehighway-system-aimed-at-reducing-air-pollution-/245810/>

# Contact



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