

# Q2 2017

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Chief Executive Officer

## Forward-looking information

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- Q2 highlights and financials
- General market update
- Nel in brief
- Nel + Proton, new organisation
- Segment updates
  - Nel Hydrogen Electrolyser
  - Nel Hydrogen Fueling
  - Nel Hydrogen Solutions
- Summary/Outlook
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- Reported revenues in Q2 2017 of NOK 39.1 million, up from NOK 13.5 million in Q2 2016, representing a growth of 190 percent
  - Order book of approximately NOK 390 million
  - Successfully closed the acquisition of Proton Energy Systems on June 30<sup>th</sup> (“Proton OnSite/Proton”), creating world’s largest hydrogen electrolyser company with a global footprint
  - Received purchase order from Uno-X Hydrogen AS for equipment to build a second H2Station® in Bergen, Norway
  - Signed final agreement with Hexagon Composites ASA and PowerCell Sweden AB to establish a joint venture (JV) for development of integrated hydrogen projects
  - Entered into exclusive, industrial-scale power-to-gas framework agreement with H2V PRODUCT
  - Entered Korean hydrogen market through joint venture agreement with Deokyang Co., Ltd.

- Orders received in Q2'17: NOK ~95 million
  - Reflects firm PO's with agreed price/volume/Terms & Conditions
- Main order announcements to date:
  - Royal Dutch Shell Plc (California), first order NOK >140 million
  - Proton order intake of NOK ~65 million
  - Other, like Iceland, H2 Frontier, etc.
  - Service/replacement/maintenance orders
- Current order backlog NOK ~390 million



*Shell and BMW design works newly developed hydrogen dispenser*

## Financial highlights – Quarterly development 2016-2017

Nel ASA Q2 2017

(NOK million)	2017 Q2 Adj.*	2016 Q2	2017 Q2	2017 Q1	2016 Q4	2016 Q3	2016 Q2	2016 Q1
Operating revenue	39.1	13.5	39.1	35.7	50.6	24.4	13.5	26.0
Total operating costs	63.9	29.9	63.9	51.3	66.6	32.7	29.9	36.1
EBITDA	-12.5	-14.0	-22.0	-13.0	-13.1	-10.1	-14.0	-7.6
EBIT	-15.3	-16.5	-24.7	-15.6	-16.0	-12.7	-16.5	-10.1
Pre-tax profit	-16.6	-16.0	-26.0	-16.2	-24.1	-12.4	-16.0	-10.1
Net profit	-17.3	-15.6	-26.7	-15.6	-18.5	12.0	-15.6	-9.7
Net cash flow from operating activities	37.3	-24.2	37.3	-14.0	11.0	10.5	-24.2	-21.3
Cash balance at end of period	201.2	265.9	201.2	386.3	225.0	223.6	265.9	289.0

- Revenue growth of ~190% compared to same period last year
- Operating earnings negatively impacted by ramp-up cost, non-cash option commitments, other Proton transaction related costs
- \*Adjusted for Q2 acquisition cost of NOK 5.2 million and non-cash share options cost of NOK 4.2 million
  - Nel Hydrogen Electrolyser continues to contribute positively to EBITDA, for the third quarter in a row

# General market update

# Total global hydrogen market

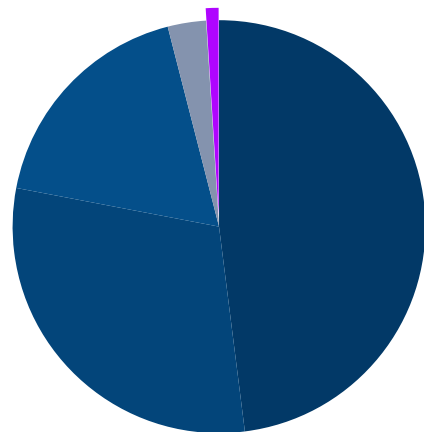
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General market update

## Large opportunities for growth within existing hydrogen market

- ~50 million ton/year market (~150 BUSD)
- Only 1% from water electrolysis
- Large potential for growth, driven by increasing focus on climate and renewable energy
- Increasing activities related to power-to-gas and refineries
- The entire market would represent ~2,800 TWh of electricity and ~450 GW, equivalent to more than 200,000 of Nel's largest electrolyzers (NEL A-485)

Hydrogen from water electrolysis represents only 1% of total market



- Steam Methane Reforming
- Crude oil cracking
- Coal gasification
- Chlor-alkali by-product
- Water electrolysis

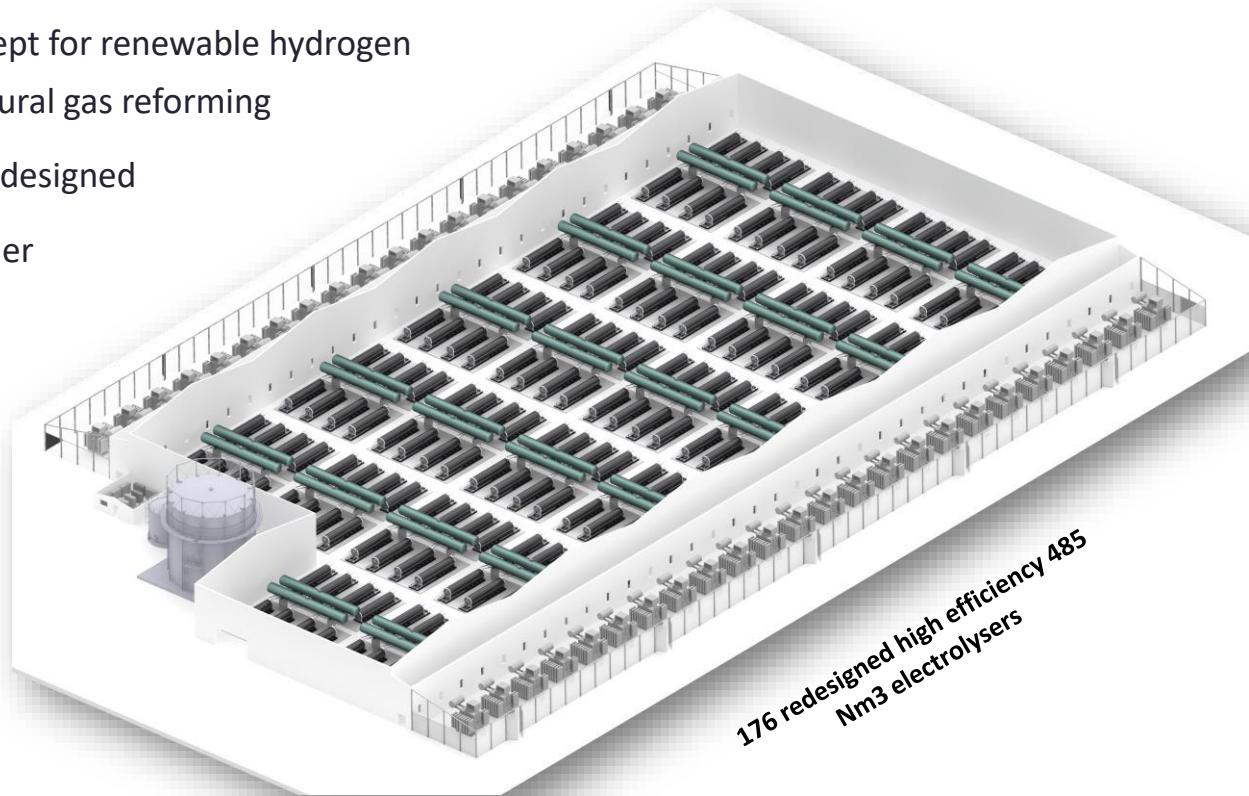


# Project develop.: 400MW renewable H2 plant to outcompete natural gas reforming

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## Project examples

- Working on GIGA factory concept for renewable hydrogen production to **outcompete** natural gas reforming
- Largest electrolyser plant ever designed
- International industrial customer
- Tied to solar power
- CapEx of USD ~175 million
- **Benchmark CapEx ratio:**
  - **0.45 MUSD/MW**



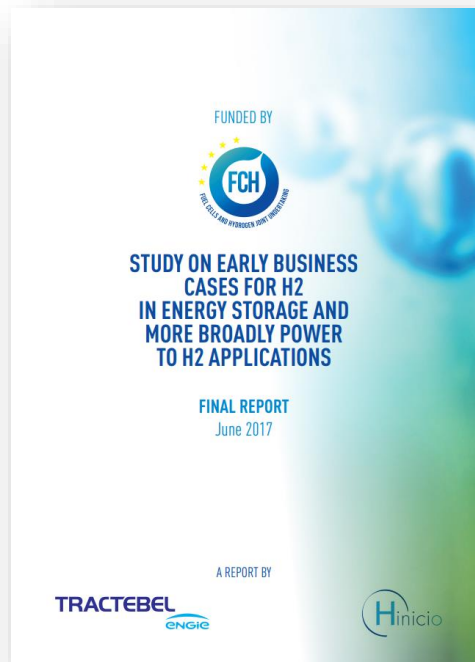
176 redesigned high efficiency 485 Nm3 electrolysers

# Power-to-H<sub>2</sub> market of NOK 39 billion until 2025, in Europe alone

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## General market update

- Recent study shows that power-to-hydrogen is already bankable in Europe at electricity prices of 40 – 50 €/MWh (37 – 47 øre/kWh)
- Potential in the EU from now until 2025 of a **cumulative electrolyser capacity of 2.8 GW, representing a market value of NOK 39 billion**
- Most bankable in short- and medium-term:
  - Hydrogen mobility deployment
  - Oil refineries
  - Chemical and fertilizer industries
  - Complemented by gas grid injection
- First ever Green-Ammonia Conference held in Rotterdam May 18<sup>th</sup>-19<sup>th</sup>



[http://www.fch.europa.eu/sites/default/files/P2H\\_Full\\_Study\\_FCHJU.pdf](http://www.fch.europa.eu/sites/default/files/P2H_Full_Study_FCHJU.pdf)

# Record range and low cost achieved

General market update

- Hyundai recently launched next generation FCEV
- Range of >800 km
- Second generation FCEV from Hyundai will receive fourth generation fuel cell tech.:
  - ~20% lighter fuel cell
  - ~10 % more efficient
  - ~30% higher power density (kW/liter)
  - >60% total (tank-to-wheel) efficiency
- Commercial launch in 2018, second generation Hyundai FCEV

## New Hyundai FCEV launch early 2018



Hyundai 2018 model FCEV: >800 km range (NEDC)

Initial production capacity of 3,000 vehicles annually

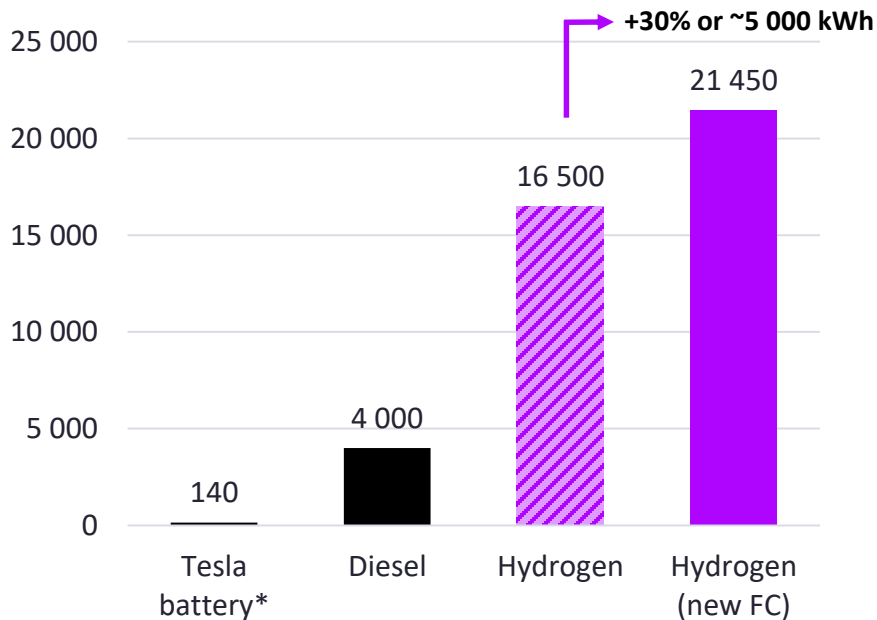
# Fuel cell efficiency improvements massively boosts energy output

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General market update

- With 1000 kg of a given energy carrier, how much useful energy can be recovered?
  - Battery: <140 kWh
  - Diesel: ~4 000 kWh
  - Hydrogen: >16 500 kWh
- Within hydrogen, **small** improvements in fuel cell technologies gives **large** improvements in recovered energy
  - Ref. graph: increase from 50% to 65% fuel cell efficiency increases energy output by ~5 000 kWh

Useful energy per 1000 kg (in kWh)



*\* For marine applications, batteries tend to have ½ the kWh capacity compared to cars due to stricter durability requirements (i.e. ~60 kWh)*

# Other recent hydrogen heavy-duty truck initiatives

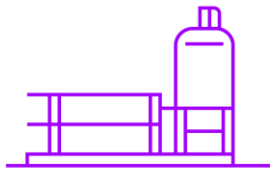
Nel ASA Q2 2017

General market update

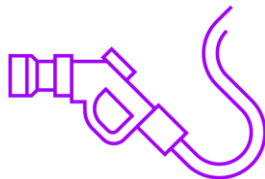


# Nel in brief

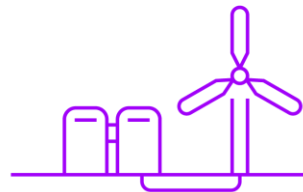
- Pure-play hydrogen company listed on OSE – facilities in Norway, Denmark and the U.S.
- Three divisions offering hydrogen technology and solutions for industrial and energy applications
- ~3500 hydrogen solutions delivered in ~80 countries world wide since 1927
- World #1 on hydrogen electrolyzers and hydrogen fueling – unrivalled performance and track-record
- Financially strong company with a world-class experienced management team in place



**Hydrogen Electrolyzers**



**Hydrogen Fueling**



**Hydrogen Solutions**



- Hanne Skaarberg Holen (chair of the Board)
  - Partner of Advokatfirmaet Thommessen. Has worked as Managing Partner of Arntzen de Besche Advokatfirma and PriceWaterhouseCoopers
- Beatriz Malo De Molina
  - Has worked as SVP and Head of M&A at Orkla ASA, and previously for Kistefos Private Equity, McKinsey & Co, various positions in Goldman Sachs
- Finn Jebsen
  - Former CEO of Orkla ASA and business areas like Borregaard, Denofa Lilleborg, Ringnes-Carlsberg and Orkla Brands.
- Mogens Filtenborg
  - Has worked as EVP, Board member and Operations/Chief Technology Officer of Vestas Wind Systems A/S
- Ole Enger
  - Has worked as CEO in Nordsilmeil, Elkem, SAPA, REC, and executive management of Norsk Hydro and Orkla.



# Nel + Proton

# Nel + Proton OnSite: Created the world's largest electrolyser company

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Nel + Proton

- Concluded the acquisition of Proton OnSite on June 30, 2017
- Enabling Nel to offer any type of electrolyser in the market
- **Combined pro forma FY 2016 revenues of NOK ~345 million (vs Nel 2016 revenue of NOK 114 million)**



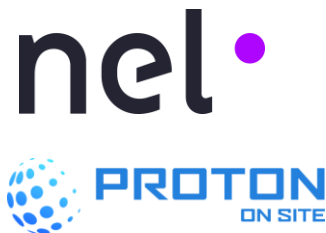
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“Nel will be a one-stop-shop completely independent of technology preference, and the combined sales teams will be a global force to reckon with”

# Transaction rationale and future opportunities

Nel ASA Q2 2017

Nel + Proton



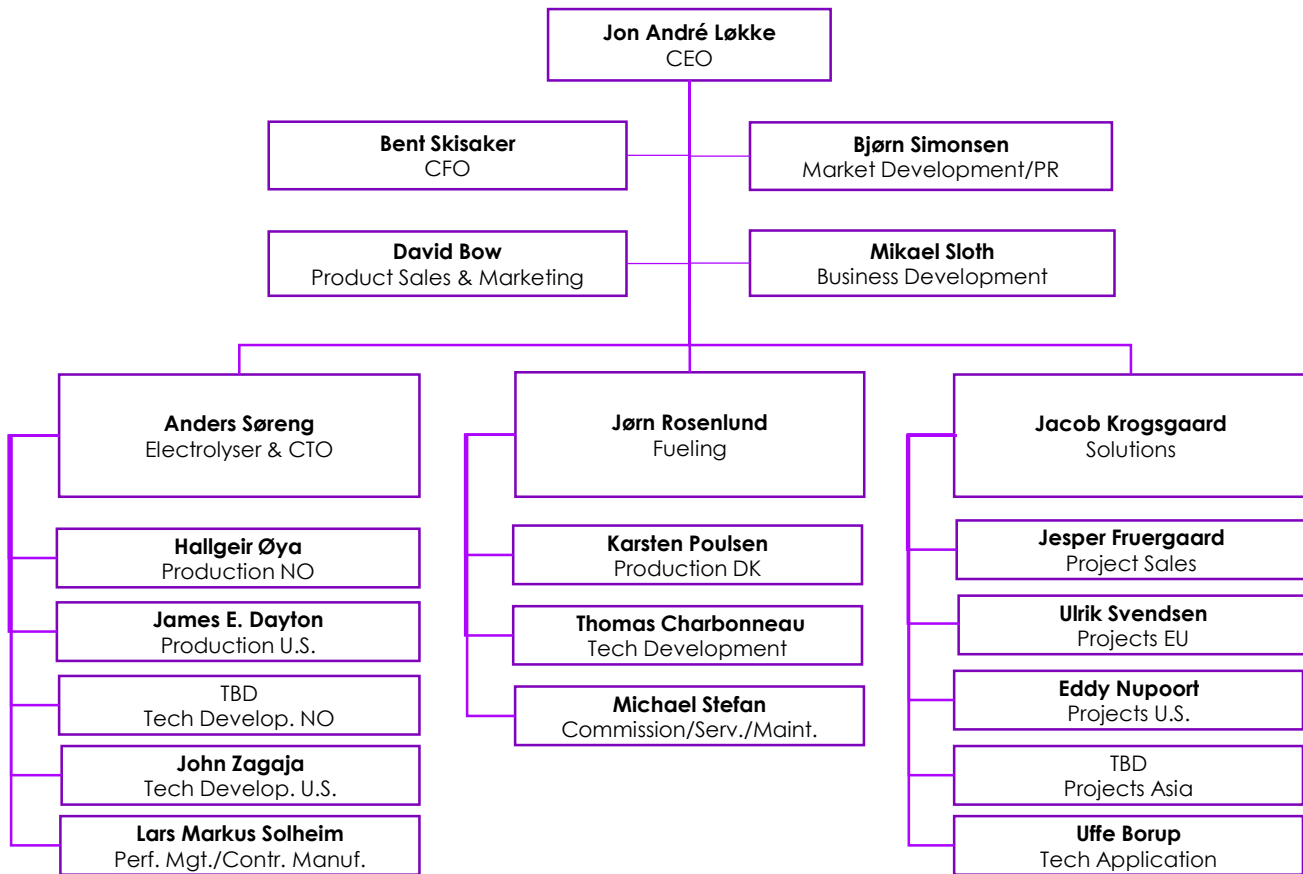
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- ✓ Made Nel the world's largest producer of electrolyzers with global reach
- ✓ Complementary sales organisation and market reach
- ✓ Secured strong foothold in the U.S. and new markets, accelerating growth ambitions
- ✓ Proton and Nel have had complementary product offering, with full range of electrolyser technologies.
- ✓ Extends range of product offering (XS, S, M, L, XL, XXL, XXXL)
- ✓ Accelerating technological development
- ✓ Cost reduction through sourcing synergies
- ✓ Financial muscles support ambitious development roadmap
- ✓ Together, Nel+Proton is optimally positioned to benefit from global opportunities arising within energy storage and hydrogen fueling

# New organization in place

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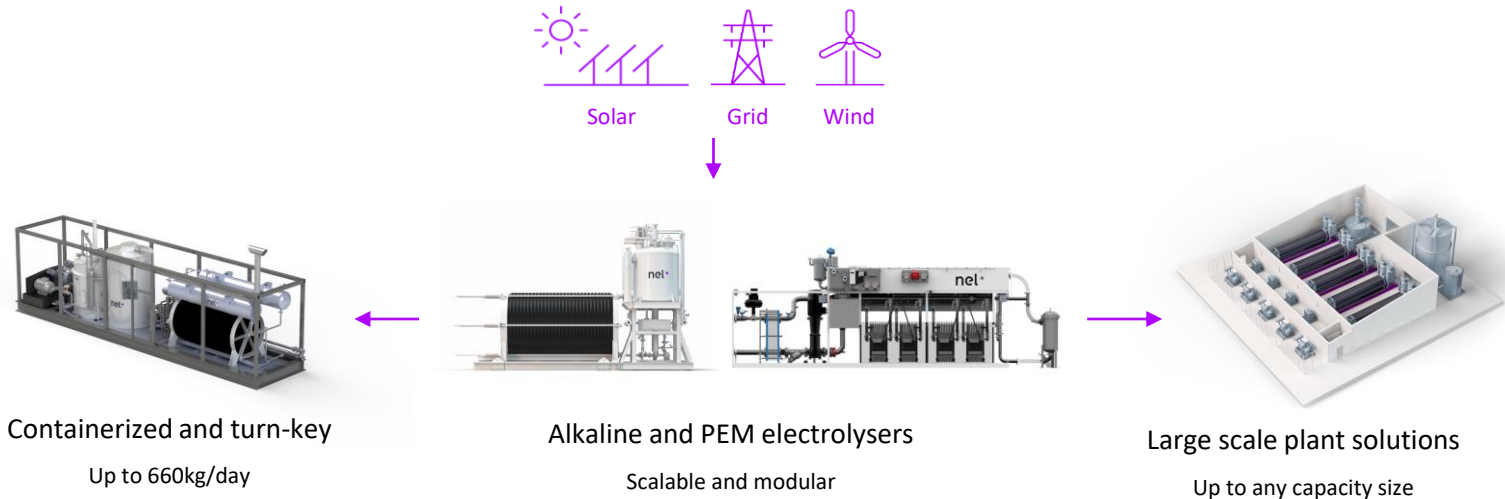
Nel + Proton



# Segment updates

# Nel Hydrogen Electrolyser

- Global leader in hydrogen prod. plants - highest uptime, lowest conversion cost, robust and reliable
- More than ~3,500 hydrogen solutions delivered in >80 countries world wide since 1927
- Scalable production capacity for industrial and energy/transport applications – small scale to large scale solutions



# Recent developments

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## Nel Hydrogen Electrolyser

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- Finalized agreement to acquire Proton, creating the world's largest hydrogen electrolyser company with a global footprint
- Entered milestone agreement with H2V PRODUCT
- Continued high interest for C-range electrolyzers
- Commercialization of the Rotolyzer® electrolyser is progressing as planned

Turn-key, both delivering 200 bar output pressure:



### C-150

150 Nm<sup>3</sup>/h (330 kg/day)  
700 kW system



### C-300

300 Nm<sup>3</sup>/h (660 kg/day)  
1.4 MW system

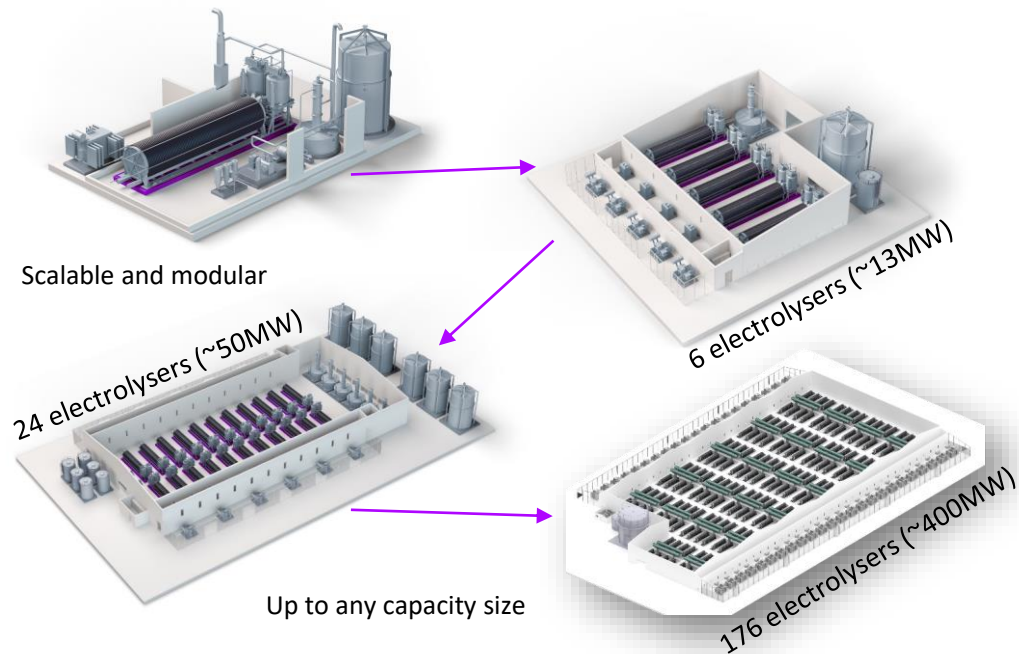
# Alkaline product range, both tailored and turnkey

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Nel Hydrogen Electrolyser

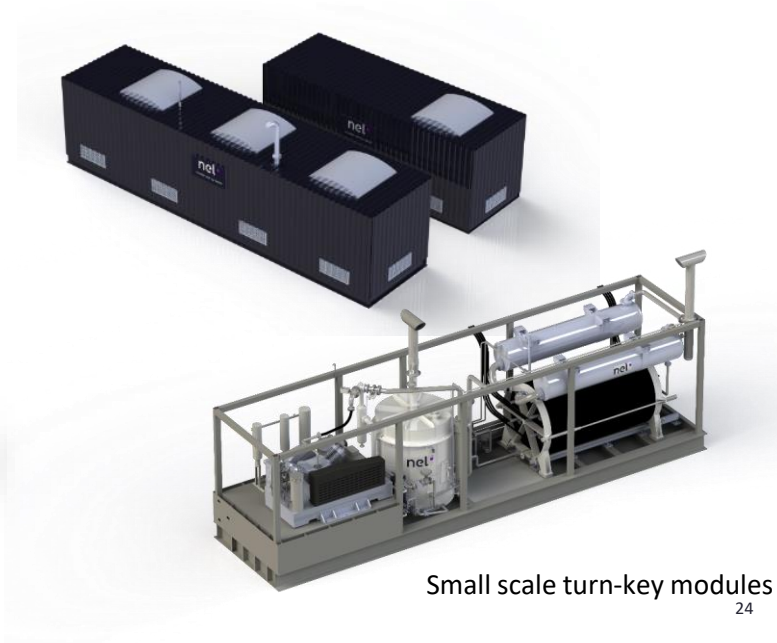
A A-RANGE

## TAILORED ELECTROLYSER SOLUTION



C C-RANGE

## TURNKEY ELECTROLYSER SOLUTION





# PEM product range

Nel Hydrogen Electrolyser

Nel ASA Q2 2017

## H-Series



Net production rate: 2-6 Nm<sup>3</sup>/hr

## C-Series



Net production rate: 10-30 Nm<sup>3</sup>/hr

## M Series

### 1 MW solution



Net production rate: 100-200 Nm<sup>3</sup>/hr

## S-Series



Net production rate: 0.53-1.05 Nm<sup>3</sup>/hr

## Lab Gas Generators



### 2 MW solution



Net production rate: 300-400+ Nm<sup>3</sup>/h

- Wide range of products sold to ~75 countries
- Customers range from industrial companies to laboratory institutes
- Also offers services, incl. installation training, service and maintenance
- More than 1 billion hours worth of operating experience on PEM

# Key differentiating factors of our PEM electrolyzers

## Nel Hydrogen Electrolysers

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- Nel is now the largest PEM electrolyser producer in the world, 5-10 times larger than the closest competitor
  - Lowest cost position on PEM systems in the industry
- Long track record with more than 1 billion hours aggregated operational experience in the field
- Highly productized portfolio with volume production up and running
  - Lean manufacturing and quality system integrated into production
- Full differential pressure PEM electrolyzers, hydrogen at 30 bar and atmospheric oxygen side simplifies design and reduces cost as well as improves safety
  - Robust technology roadmap to increase capacity and reduce cost going forward
  - More than 80 patents

# Entered milestone agreement with H2V PRODUCT

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Nel Hydrogen Electrolyser

- **Exclusive, industrial-scale power-to-gas framework agreement with H2V PRODUCT**
  - French company focused on massive carbon-free hydrogen production
  - Carbon free hydrogen will be injected into main gas pipeline that distributes natural gas throughout France
- **First 100 MW hydrogen plant, contract value of NOK ~450 million, increasing to NOK ~3.15 billion for six other H2V PRODUCT plants (total of 700 MW)**
  - First plant developed 2018-2020, target to continue adding lines in period between 2020-2025
  - Partnership represents significant opportunities for further expansions
- **Expansion of Nel production capacity**
  - Investment decision related to capacity expansion at Notodden is expected in connection with final agreements

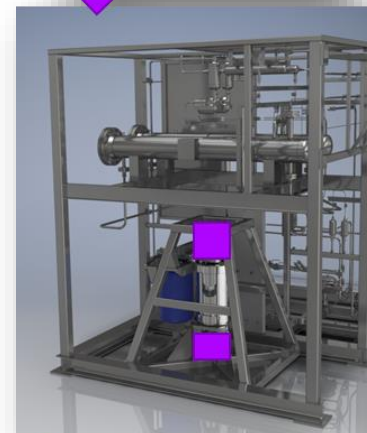
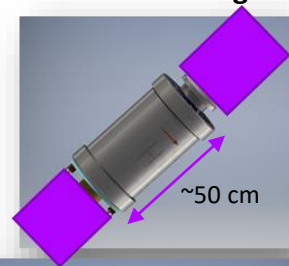
**Dunkerque gas terminal**



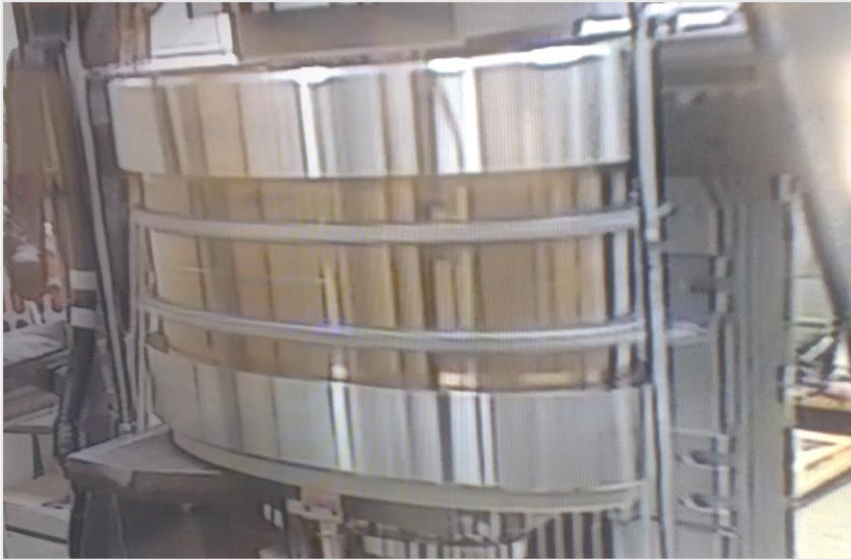
## Project running according to plan

- Design and technical solutions improved to facilitate higher capacity and commercial hydrogen production
- Currently installed and running at Nel Electrolyser Test Center
  - Test center is equipped with infrastructure dedicated for testing of advanced electrolyser systems
- Initiate long-lifetime tests during fall of 2017, assuming improved design is verified (incl. performance/business case)
- Target commercial launch in 2018 (10 Nm<sup>3</sup>/h)
  - Continue development to increase scale over time

**100x smaller than ATM from high pressure and centrifugal effect**

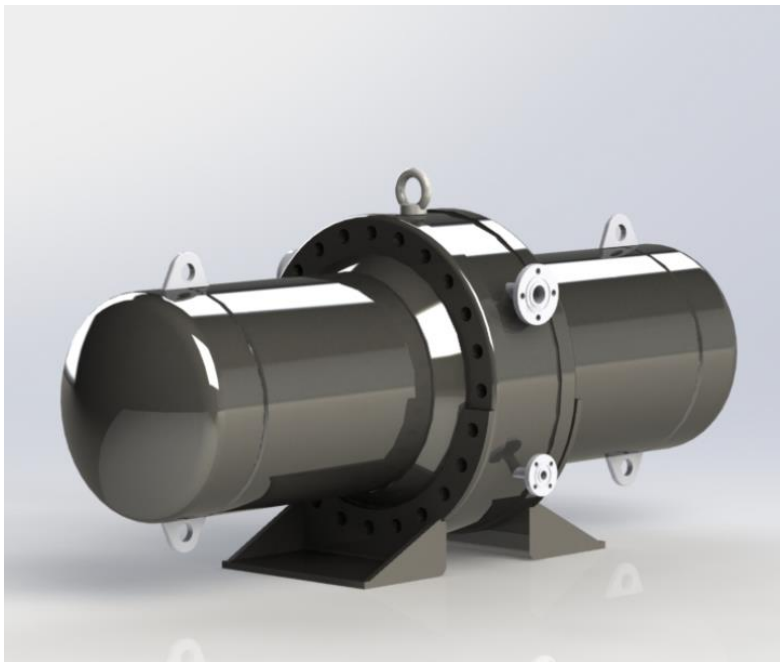


## **The Rotolyzer operating under high pressure and with centrifugal effect**



- Video taken in Nel Electrolyser Test Center, Notodden
- Long-term tests ongoing, confirming (i) energy efficiency, (ii) gas quality and (iii) robustness/maintenance cost

## High pressure alkaline



- Stack size 1/4 vs. atmospheric, to be tested during H2'17
- Potential to improve both efficiency and reduce cost, especially designed for a fully automated production line

1. Atmospheric alkaline = 485 Nm<sup>3</sup> capacity

12m

2m

2. High pressure = 500 Nm<sup>3</sup>

6m

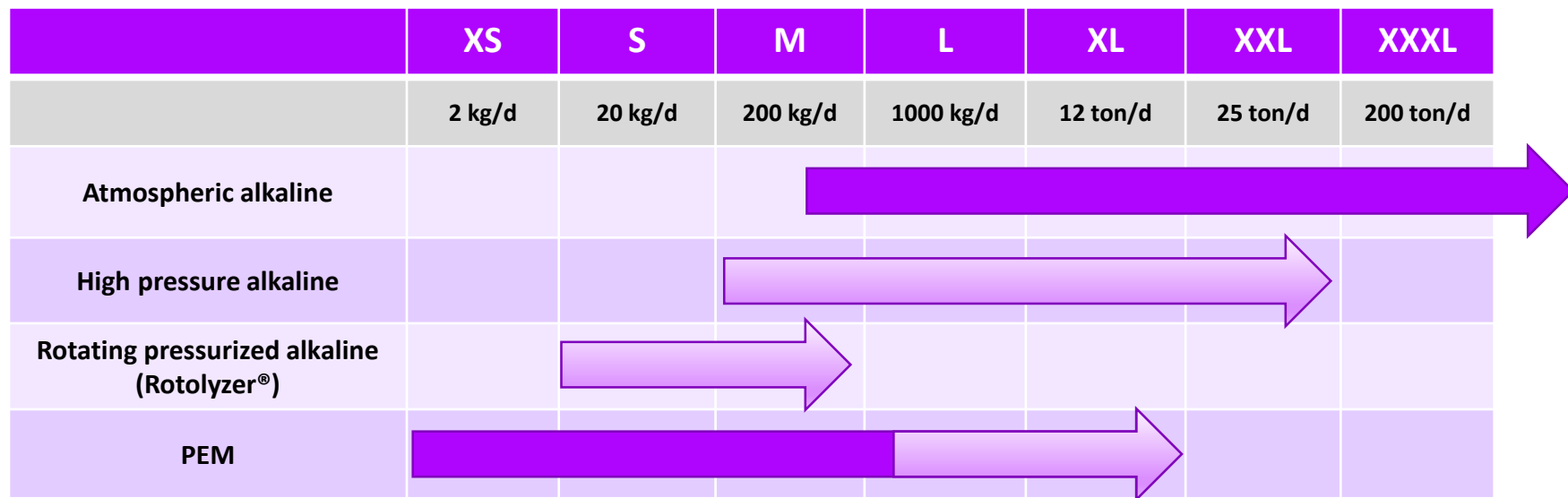
1m

3. Considering significantly larger capacity per stack

# Current and future technology/product portfolio

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Nel Hydrogen Electrolyser



- Any type of electrolyzers in any size – allow the customer to make their own choice
- Leading cost position across portfolio (CapEx/MW) w/continued cost reduction opportunities

# Nel Hydrogen Fueling

- Global leader within hydrogen fueling solutions for vehicles, first to adapt the newest fueling standards
- Delivered more than 30 stations in 8 countries across Europe since 2003
- Highest reported availability and innovative, in-house developed technologies



High capacity, smallest footprint

200 kg/day, 10m<sup>2</sup>



Flexible installation, smallest footprint

50 m from station, 1/3 size of normal dispenser



Largest manufacturing facility

300 station per year capacity

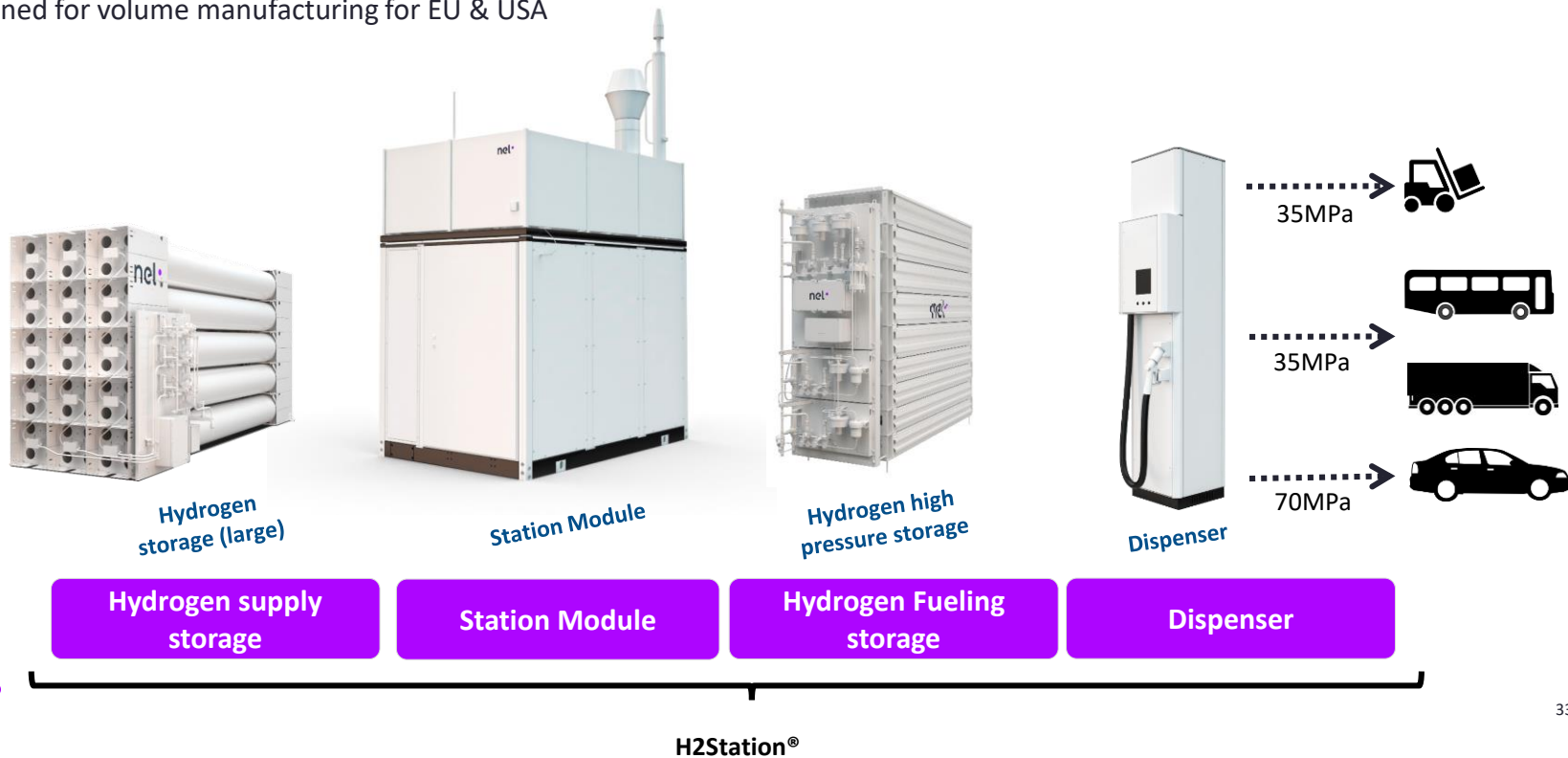


# Fueling station modules – designed for volume manufacturing

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Nel Hydrogen Fueling

- Compact modular turn-key system with flexible site integration
- Designed for volume manufacturing for EU & USA

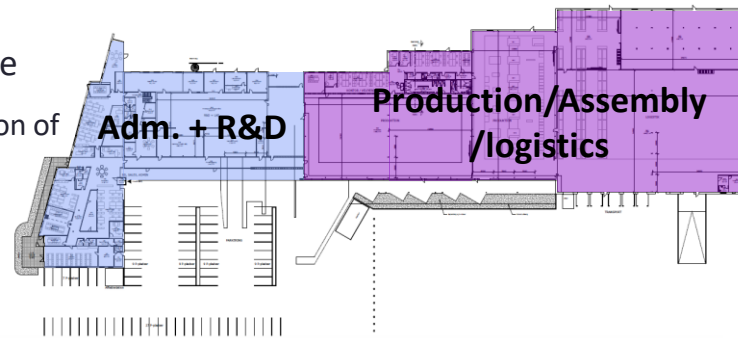


# Have started production of H2Stations in our new plant

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Nel Hydrogen Fueling

- Development of Herning facility continues on budget & schedule
  - Production moved into new building over the summer, started production of first US stations mid-August, official opening to be scheduled
  - Total investment of NOK 85 million, of which NOK ~45 million by Q2'17
  - Name-plate production capacity of ~300 stations/year



# Nel Hydrogen Solutions

- Unified delivery of complex renewable hydrogen solutions, efficient system integration, project development and sales across segments
- Only provider of integrated solutions along the entire value chain:

## 1. Fueling Networks

- Develop entire fueling networks, incl. renewable hydrogen production
- Service and maintenance
- Network monitoring services

## 2. Renewable Hydrogen & Storage Solutions

- Renewable hydrogen
- Production based hydro, wind or solar
- Large, medium or small scale
- Storage solutions and “constant” renewable supply



# Created Scandinavian powerhouse on hydrogen

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Nel Hydrogen Solutions

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The hydrogen specialists in Scandinavia joined forces to create a JV, taking advantage of each party's respective technologies and competencies to develop world-class, integrated hydrogen solutions



Leading company on hydrogen production and fueling technologies



Leading company on composite hydrogen storage solutions



Leading company on fuel cell technology

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- Finalized JV agreement with Hexagon and PowerCell, forming strategically important cooperation, working with global market leaders with specialised technology and competencies
- One-stop-shop for world-class hydrogen solutions tailored for selected emerging, high growth hydrogen energy markets

## Entered Korean market through joint venture with Deokyang

Nel Hydrogen Solutions

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- Nel entered JV agreement with Deokyang Co Ltd, South Korea's largest hydrogen supplier, after closing of Q2
- Nel-Deokyang Ltd established for exclusive sales and marketing of Nel H2Station® in Korea as the country begins government hydrogen roll-out
  - Government committed to building a national hydrogen infrastructure with 100 fueling stations in operation by 2020 and 230 stations by 2025
- Nel solutions cover the entire value chain from production technology to fueling station, Deokyang supplies hydrogen through its four Korean plants
- JV to participate in public funding arrangements for hydrogen fueling stations during H2'17

# California update

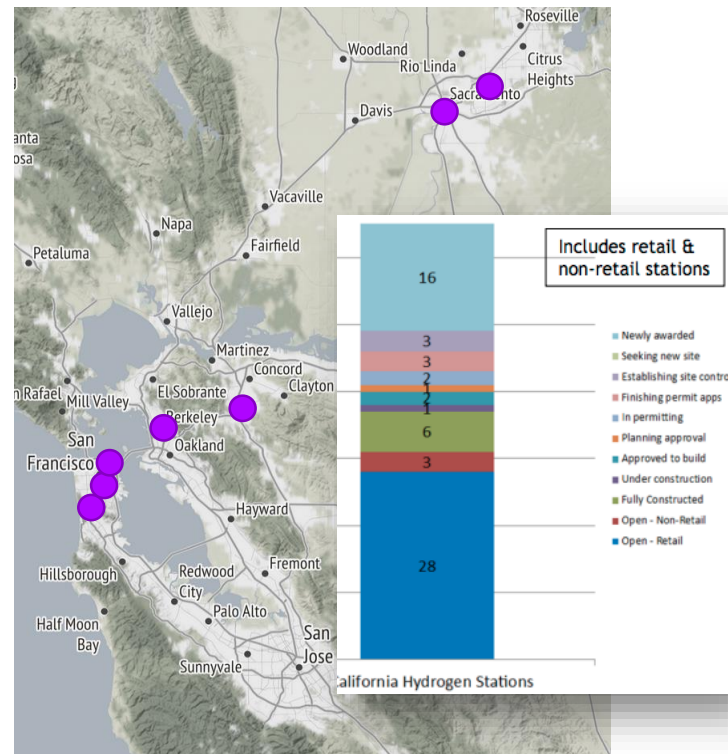
Nel Hydrogen Solutions

Nel ASA Q2 2017

- Nel is under exclusive framework contract with Shell in partnership with Toyota Motor Corp. for supply, construction and maintenance of hydrogen fueling stations
- First purchase order received during the quarter, with value in excess of NOK 140 million
- Expect additional purchase orders to come from Shell
- H2Station® modules expected to ship in 2017 and 2018
- Also pursuing heavy duty vehicle projects in the state
- Retail hydrogen fueling stations has started to populate key markets in California
- 28 retail hydrogen stations open throughout the state

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## Shell hydrogen stations in the North



Locations where Shell receives CEC grants from current round of funding

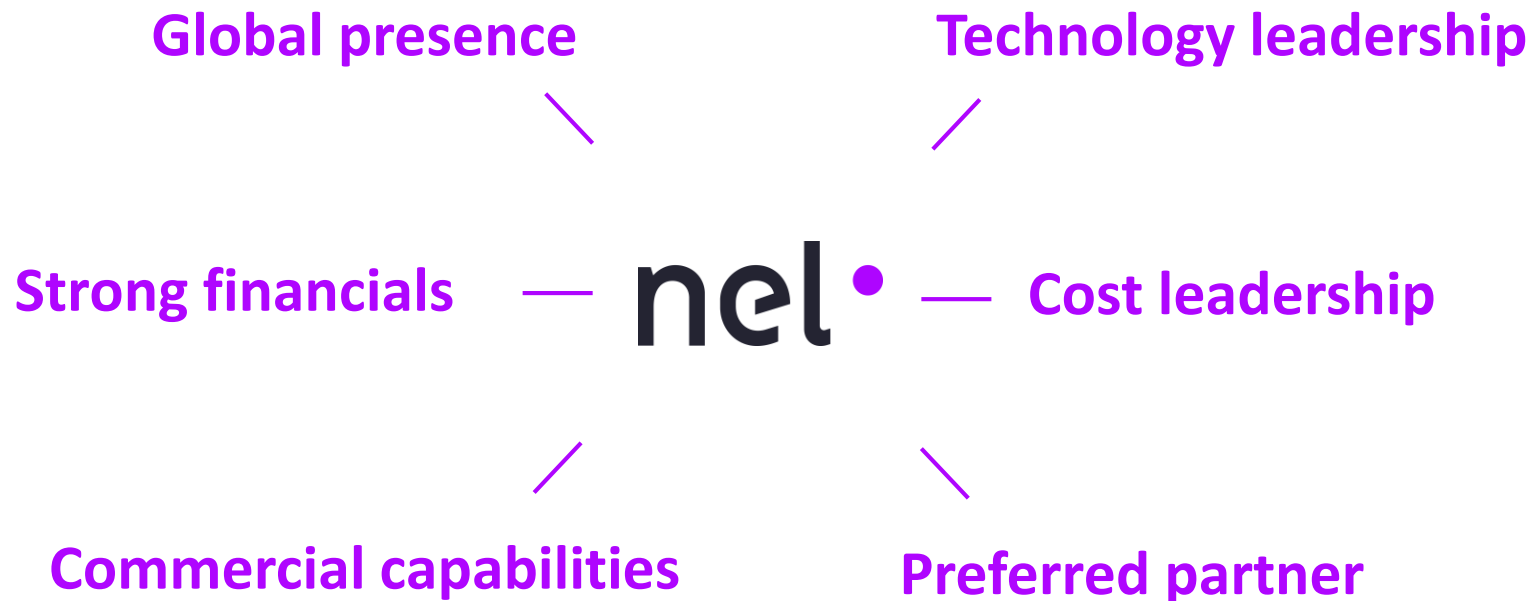
# Summary/Outlook

# Creating a rapidly growing billion NOK company

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Levering on the arising opportunities within energy storage and hydrogen fueling

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## Nel Hydrogen Group

- Significant contribution from all business areas going forward, incl. Proton
- Revenues in Q3'17 expected to be more than twice as high as seen in Q2'17

## Nel Hydrogen Electrolyser

- All time high level of sales leads, both in traditional and new markets
- Positive EBITDA contribution from Proton in Q3'17

## Nel Hydrogen Fueling

- Started production in new Herning facility early August, currently focusing on U.S. H2Station® modules for Shell

## Nel Hydrogen Solutions

- Currently pursuing projects together with Proton in the U.S. and other locations
- Expect to see additional order from Shell
- Expect to see additional order for heavy duty transportation like buss, etc.
- JV with Hexagon and PowerCell will be operational, will work to develop sales pipeline further

# Q&A

*Welcome back, Q3'17 presentation  
on October 31<sup>st</sup>, 2017*

## Appendix: Profit and loss

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(NOK million)	2017 Q2	2016 Q2	2017 Q1-Q2	2016 Q1-Q2	2016
Operating revenue	39.1	13.5	74.9	39.5	114.5
Operating costs	63.9	29.9	115.2	66.0	169.8
EBITDA	-22.0	-14.0	-35.0	-21.6	-44.9
EBIT	-24.7	-16.5	-40.3	-26.6	-55.3
Pre-tax profit	-26.0	-16.0	-43.4	-26.1	-62.6
Net profit	-26.7	-15.6	-42.6	-25.3	-55.8
Total comprehensive income	-25.0	-17.9	-41.9	-33.8	-75.4

## Appendix: Balance sheet

Nel ASA Q2 2017

(NOK million)	2017 Q2	2016
Fixed assets	1,157.3	462.9
Current assets	416.7	300.0
-of which is cash and cash equivalents	201.2	225.5
Equity	1,200.5	671.2
Long term liabilities	26.1	12.6
Short term liabilities	216.4	65.6
Total balance	1,574.1	762.9
Equity ratio (%)	76.3%	88.0%

## Appendix: Cash flow

Nel ASA Q2 2017

(NOK million)	2017 Q2	2016 Q2	2016
Pre-tax profit (loss)	-26.0	-16.0	-62.6
Net cash from operations	37.2	-24.2	-34.2
Net cash from investments	-198.5	-8.6	-60.2
Net cash from financing	-5.9	9.7	6.8
Net change in cash and cash equivalents	-167.2	-23.1	-87.6
Cash at end of period	201.2	265.9	225.5

# Number one by nature