With the Smart Cylinders fleet management system, you can simplify your gas delivery service and cut your transport costs by up to 50%*. This leads to a significantly reduced carbon footprint and improved customer satisfaction.

By using advanced sensors and cutting edge technology, Smart Cylinders puts you in charge of your gas delivery logistics like never before. Our fleet management system for cylinder customers gives you a real-time overview of all your gas cylinders, across multiple installations, and informs you which cylinders are running low. It can automatically generate the most effective transport route for your next delivery run.

*Estimates based on results from our pilot customers. Actual cost reduction may vary.
The patent pending Smart Cylinders sensor monitors LPG consumption in real time. The sensor can easily be applied to existing cylinders by your driver and works on installations with multiple cylinders or one cylinder only. The Smart Cylinders web portal provides a simple overview of LPG consumption, and lets the LPG supplier easily manage orders and deliveries. The web portal can be used in connection with any existing order system. A detailed customer roll-out procedure is included in your Smart Cylinders starter kit. This makes it easy to get the system up and running.

The Smart Cylinders fleet management system uses sensors to collect data about customers’ LPG consumption on cylinders, and a web portal to administrate orders and deliveries.
3.0 Cylinder setups

The Smart Cylinders sensor may be used on any kind of cylinder setup. Only one sensor is needed per installation, regardless of the number of cylinders.

- **Changeover**: Multiple cylinder configuration with a Changeover. Cylinders on one side are in use at the same time.

- **Parallel**: Multiple cylinders coupled in parallel to a Changeover. With this option all cylinders may be changed on the same filling trip.

- **Single**: Single cylinder installation.
By implementing the Smart Cylinders fleet management system, your company will make hassle-free LPG cylinder deliveries at reduced costs and with a lower carbon footprint.

- **Automatic orders**: No need for incoming phone calls or e-mails, our sensors will know when it’s time for a refill.
- **Optimized logistics**: Reduce up to 50% of your transport costs with better capacity management and smart delivery scheduling.
- **Reduced carbon footprint**: Provide a greener solution by cutting CO₂ emissions from your vehicles.
- **Better asset management**: Improve the utilization of your cylinder metal (cylinder fleet).
- **Improved customer satisfaction and loyalty**: Become a number one choice by your customers by offering an extra service.
The Smart Cylinders solution has been tested and verified on multiple customer groups.

### Commercial users
For restaurants or other industries using LPG on cylinders. Automatic delivery will make sure the customer can focus on their core business and will not have to worry about running out of LPG.

### Domestic users
For off-grid customers, who are using LPG for heating. The Smart Cylinders system can make the use of LPG hassle-free, and a prioritized energy source by consumers, able to compete with oil and coal.

### Holiday parks
No need to manually check the LPG level on cylinders for residents. With the automation provided by Smart Cylinders, the LPG supplier will be able to deliver directly to each house park resident in time.
Case 1

Reduced logistic costs by combining deliveries in the same area

Scenario

In a specific geographical area, an LPG supplier has two nearby cylinder customers: customer A and B.
A major reduction in driving distance and time due to the combination of deliveries to nearby customers. Orders can be created automatically based on sensor data, so that the sales team can focus on outwards sales, and not on incoming order handling.

**Without Smart Cylinders**

Customer A calls in and claims they are ready for a refill, and they get a delivery the next day. Then Customer B calls in and claims they are ready for a refill, so a new delivery must be made to Customer B.

**With Smart Cylinders**

The Smart Cylinders system detects that Customer A is ready for a refill, but also detects that Customer B will be ready for a refill within a couple of days. The system therefore puts the deliveries to Customer A and Customer B on the same trip.

**Result**

A major reduction in driving distance and time due to the combination of deliveries to nearby customers. Orders can be created automatically based on sensor data, so that the sales team can focus on outwards sales, and not on incoming order handling.
Optimal capacity management by proactive delivery planning

Scenario
An LPG supplier is delivering cylinders to a large number of customers.
The number of orders and deliveries per day varies a lot throughout the week. Mondays are normally the worst, when customers who are running low after the weekend call in to make sure they will get a delivery in time.

- To handle the large number of incoming orders on Mondays, extra working hours are needed.
- To make sure all customers will get deliveries on time the vehicle fleet must be big enough to handle the large peaks.

Always knowing how much LPG a customer has left, our fleet management system makes sure orders are handled automatically, and deliveries are spread evenly throughout the week.

**Result**

Capacity needed on order handling and deliveries are reduced, improving use of fixed assets in the company.
Reduced logistic costs by optimal route generation

Scenario
An LPG supplier is creating delivery routes based on incoming orders by phone or e-mail.
The driver's delivery routes are manually created. There is often a large number of standing orders, and a human will have to do best estimates in order to solve the puzzle.

By using sophisticated algorithms, the Smart Cylinders system automatically generates suggested delivery routes for each vehicle on each day. The routes may be manually verified or adjusted by the LPG supplier.

Result

Reduced time used on route planning. Optimal routes minimize driving distances and time spent on the road.
7.0  Smart Cylinders Sensor

PATENT PENDING
The Smart Cylinders sensor enables monitoring of remaining gas in LPG cylinders and transmits the data to a web portal. The plug & play sensor is made from recyclable aluminium and designed to withstand tough environments.

**Easy to install**
The sensors can be installed without technicians and set up with a smartphone QR-app.

**Long battery life**
Up to 10 years of battery life.

**Rugged design**
The sensors are designed to withstand up to 150kg of continuous load.

**Temperature resistant**
The sensors can handle environments with temperatures ranging from -20°C to +40°C.

**Wireless**
Wireless GSM/LTE connectivity ensures stable and easy communication and data transfer.

**Waterproof**
The sensors are waterproof, IP65.

**Overload protection**
To ensure that the sensors can withstand rough handling they are designed with an overload protection.

**Space efficient**
The sensor is compact and only adds 4,8 cm to the cylinder height.

**Recyclable**
The sensors are made from 100% recyclable aluminium.

**EX Zone 2**
The sensors are certified for use in EX Zone 2 environments.

**Always updated**
Over the air updates ensure that the sensors’ firmware is always up to date.
8.0 Smart Cylinders Web Portal

The Smart Cylinders web portal is your company’s platform for handling orders and deliveries in a way that has never been experienced before. Some of the great features include:

- **Live monitoring**: Get full overview of your customers’ LPG consumption with live monitoring provided by the sensor.
- **Prediction**: The web portal predicts days left until empty for every customer by using live data points and historic consumption rates.
- **Automatic order handling**: When the system detects that a customer is ready for a refill, a new order can be generated automatically.

The Smart Cylinders web portal is your company’s platform for handling orders and deliveries in a way that has never been experienced before.
Order clustering

Using state of the art algorithms, the web portal combines deliveries to customers in the same region in the most optimal way.

Capacity balancing

New deliveries will be proactively planned in the system, making sure the load is spread evenly throughout the week.

Route optimization

Automatic route generation reduces time spent on planning, and distance driven.
The Smart Cylinders telemetry sensor is a simple but effective way to reduce logistical costs for bottled gas deliveries. We have introduced the pads on a holiday village with 300+ lodges with great success.

- Brian Manchester, Sales & Marketing Manager at Premier LPG Limited

Our rapid growth strategy would not be possible to execute without the use of the Smart Cylinders system.

- Niels Christian Brogger, CEO of NorgesGass
Smart Cylinders AS is a born-global tech company, based in Oslo, Norway.

The company was founded by a team of engineers with a background from mechanical, electronical and cybernetic engineering at the Norwegian University of Science and Technology, after a thorough international market analysis of the LPG industry.

The idea behind Smart Cylinders is simple: Combine technology and market know-how to create a better ecosystem for delivering LPG to private households and businesses globally. Both for the environment and the end-users who depend on LPG for heating and cooking.

Existing business models in the LPG industry are decades old. With Smart Cylinders we have created a more efficient and environmentally friendly solution.
We are working with some of Europe’s finest gas delivery companies. Together, we are improving logistics, cutting costs and reducing carbon footprints in the LPG delivery industry.
## Pricing

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Contact us today for a price quote.

The sensors have no installation cost, as your driver may easily install them upon the next cylinder delivery (plug & play).

The price model is made up of a monthly license for using the web-portal, and a one-time investment cost per sensor.
Simplify your gas delivery service and reduce CO₂ emissions

LPG is a vital part of our energy system. We will be dependent of it for many decades to come. LPG is cleaner than other fossil energy sources. Also, the industry is deeply committed to make production and consumption of LPG even cleaner and more environmentally friendly.

However, the systems used to transport and distribute gas cylinders are creating a massive and unnecessary carbon footprint. Distribution systems are expensive, ineffective and dated. Gas delivery logistics rely heavily on manual operations, and this is a big problem. Because let’s face it - humans are bad planners.
To illustrate our point, we conducted an experiment. We challenged one of our most brilliant and capable engineers with a simple task: “Find the most effective transport route between 15 different locations in the city of Oslo”. Then we made a computer do the same. The results were striking: The solution from our brilliant engineer was only 60% as effective as the route drawn by the computer. In a matter of seconds, the computer had drawn out and planned the perfect transport route between the 15 locations.

This is what Smart Cylinders is all about. We have created a unique, technological solution to dramatically improve gas delivery services, making them more cost effective and reducing carbon footprints.

By using advanced sensors and cutting edge technology, Smart Cylinders puts you in charge of your gas delivery logistics like never before. Our system gives you a real time overview of all your gas cylinders, across multiple installations, and informs you which cylinders are running low. It can automatically generate the most effective transport route for your next delivery run.

Reports from our pilot customers are uplifting and confirms the benefits of using Smart Cylinders to improve their distribution systems. Our first customer, NorgesGass, saw a 25% increase in distribution capacity after switching to our system. One of our British customers have reduced their number of transport runs by 33% in their test regions.